

# Personnel

## Directors, Scientific Members

Prof. Dr. Klaus Blaum – stored and cooled ions  
Prof. Dr. Jim A. Hinton – non-thermal astrophysics  
Prof. Dr. Werner Hofmann – particle physics and high-energy astrophysics, until 31.05.2019  
Honorarprof. Dr. Christoph H. Keitel – theoretical quantum dynamics and quantum electrodynamics  
Prof. Dr. Dr. h.c. Manfred Lindner – particle and astroparticle physics  
Prof. Dr. Thomas Pfeifer – quantum dynamics and control

## Emeriti Scientific Members

Prof. Dr. Hugo Fechtig  
Prof. Dr. Werner Hofmann  
Prof. Dr. Konrad Mauersberger  
Prof. Dr. Bogdan Povh  
Prof. Dr. Heinrich J. Völk  
Prof. Dr. Hans-Arwed Weidenmüller

## External Scientific Members

Prof. Dr. Felix A. Aharonian, Dublin  
Prof. Dr. Rudolf M. Bock, Darmstadt  
Prof. Dr. Stanley J. Brodsky, Stanford  
Prof. Dr. Lorenz S. Cederbaum, Heidelberg  
Prof. Dr. Johannes Geiss, Bern  
Prof. Dr. Gisbert Frhr. zu Putlitz, Heidelberg  
Prof. Dr. Gerd Röpke, Rostock  
Prof. Dr. Volker Soergel, Heidelberg  
Prof. Dr. Joachim H. Ullrich, Braunschweig  
Prof. Dr. Christof Wetterich, Heidelberg  
Prof. Dr. Daniel Zajfman, Rehovot

## Managing Director

Prof. Dr. Werner Hofmann, until 31.12.2017  
Prof. Dr. Thomas Pfeifer, from 01.01.2018

## Representative of the Board of Directors

PD Dr. Günter Sparn

## Max Planck Fellows

Prof. Achim Schwenk  
Prof. Dr. Alexei Yu. Smirnov

## Heisenberg Fellows

PD Dr. Frank Rieger  
Dr. Werner Rodejohann

## Max Planck Research Group Leaders

Dr. Florian Goertz, from 01.01.2017  
PD Dr. Alban Kellerbauer, subsequent to ERC Starting Grant until 30.06.2018  
Dr. Holger Kreckel, subsequent to ERC Starting Grant

Dr. Brian Reville, from 01.05. 2019

## Elected Representative to the CPTS

Dr. Bernhard Schwingenheuer

*The following list includes persons working at the institute during all or part of the reporting period. All persons are listed in their last/present*

## *position.* Scientific Staff

Prof. Dr. Evgeny Akhmedov  
Dr. Christian Bauer  
PD Dr. Konrad Bernlöhr  
Dr. Christian Buck  
PD Dr. José Ramón Crespo López-Urrutia  
PD Dr. Antonino Di Piazza  
PD Dr. Alexander Dorn  
Dr. Sergey Eliseev  
apl. Prof. Dr. Jörg Evers  
PD Dr. Bernold Feuerstein  
Dr. Manfred Grieser  
Dr. Robert von Hahn  
Prof. Dr. Wolfgang Hampel  
PD Dr. Zoltán Harman  
Dr. habil. Karen Z. Hatsagortsyan  
Dr. German Hermann  
Dr. Rebecca Hermkes  
Dr. Gerd Heusser  
Dr. Gertrud Hönes  
Prof. Dr. John Kirk  
Prof. Dr. Till Kirsten  
Prof. Dr. Karl Tasso Knöpfle  
Dr. Frank Köck  
PD Dr. Teresa Marrodán Undagoitia  
PD Dr. Robert Moshhammer  
Dr. Szilard Nagy  
Dr. Oldřich Novotný  
Dr. Christian Ott  
PD Dr. Adriana Pálffy-Buß  
Dr. Michael Panter  
Prof. Dr. Michael Schmelling  
Dr. Jochen Schreiner  
Dr. Claus Dieter Schröter  
Dr. Bernhard Schwingenheuer  
Dr. Hardy Simgen  
Dr. Anatoly Smolnikov  
Dr. Sven Sturm  
Dr. Richard J. Tuffs  
Dr. Felix Werner  
Dr. Richard White  
Prof. Dr. Andreas Wolf

## PostDocs

Façal Ait Benkhali  
Tommi Alanne  
Pedro Amaro  
Alessandro Angioi  
Sven Augustin  
Ioanna Arapoglou

Giorgio Arcadi  
Sven Bernitt  
Shikha Bhadoria  
Pavlo V. Bilous  
Alexander Blättermann  
Aurélie Bonhomme  
Andrii Borodin  
Pol Bordas Coma  
Sergey Bragin  
Vedran Brdar  
Stefan Bruenner  
Giorgio Busoni  
Miguel David Campos Vidal  
Nicolas Camus  
Sabrina Casanova  
Salvatore Castrignano  
Nachiketa Chakraborty  
Shaolong Chen  
Jiří Daněk  
Raquel de los Reyes López  
Christoph Deil  
Hans Dembinski  
Thomas Ding  
Stepan Dobrodey  
Axel Donath  
Guillaume Eurin  
Pavel Filianin  
Oliver Fischer  
Shao-Feng Ge  
Gwenaël Giacinti  
Lukas Graf  
Florian Grussie  
Jonas Gunst  
Joachim Hahn  
Anne Harth  
Julia Haser  
Constanze Hasterok  
Mark Heisel  
Alexander Helmboldt  
Fabian Hesse  
Hanne Heylen  
Martin Höcker  
Wenjia Huang  
Sudip Jana  
Yun Jiang  
Ervin Kafexhiu  
Ábel Kálosi  
Grigorious Katsolakous  
Yoann Kermaidic  
Jochen Ketter  
Amir Nawaz Khan  
Andrea Kirsch  
Tatsiana Klimkovich  
Florian Köhler-Langes  
Samridha Kunwar  
Martin Laux  
Yeunhwan Lim  
Yifan Liu  
Rubén López Coto  
Alexey Lubashevskiy

Rasmus Sloth Lundkvist Hansen  
Chunhai Lyu  
Werner Maneschg  
Vincent Marandon  
Christian Meyer  
Sebastian Meuren  
Yonghao Mi  
Niklas Michel  
Preeti Mishra  
Alison Mitchell  
Andreas Mooser  
Maxime Mougeot  
Sebastian A. Müller  
Brenden S. Nickerson  
Sebastian Ohmer  
Joaquim Palacio  
R. Daniel Parsons  
Sudhanwa Patra  
María del Pilar Peco Regales  
Moritz Platscher  
Dmitry Popov  
Anton Prosekin  
Sabina Pürckhauer  
Farinaldo Queiroz da Silva  
Quentin Remy  
Xueguang Ren  
Alexander Rischka  
Christian Roca Catala  
Carlo Romoli  
Ulises Jesus Saldana Salazar  
Sunny Saurabh  
Kai Schmitz  
Lisa Schmöger  
Kirsten Schnorr  
Kerstin Schönung  
Harm Schoorlemmer  
Stefan Schoppmann  
Marc Schuh  
Maria Schwarz  
Kai Marian Sdeo  
Tom Segal  
Chintan Shah  
Bastian Sikora  
Veit Stooß  
Rajagopalan Subramanian  
Xufei Sun  
Sunil Kumar Sudhakaran  
Suo Tang  
Nicolas Teeny  
Andrii Terliuk  
Luigi Tibaldo  
Alexander Tichai  
Andreas Trautner  
Bingsheng Tu  
Liss Vazquez Rodriguez  
Aion Viana  
Stephen Vogel  
Stefan Vogl  
Victoria Wagner  
Enliang Wang

Jason Watson  
Anne Wegmann  
Andreas Weigel  
Marvin Weyland  
Patrick Wilhelm  
Tim Wolf  
Anton Wöllert  
Xunjie Xu  
Ruizhi Yang  
Pauline Yzombard  
Roberta Zanin

## PhD Students

Helena Almazan Molina  
Petar Andrejic  
Lennart Aufleger  
Andreas Bally  
Cristina Benso  
Divya Bharti  
Paul Birk  
Ingolf Bischer  
Simone Blasi  
Michael Blessenohl  
Matthew Bohman  
Gergana Dimitrova Borisova  
Vikas Bothe  
Christian Breitenfeldt  
Mischa Breuhaus  
Daniel Bakucz Canário  
Halil Cakir  
Ting Cheng  
Giovanni Cerchiari  
Dominick Cichon  
Francesco Conte  
Carina Da Costa Castanheira  
Christian Doering  
Menno Door  
Kamil D. Dzikowski  
Tanya C. Edwards  
Alexander Egl  
Yannick Emonds  
Stefan Erlewein  
Patrick Friebel  
Patrick Fross  
Jürgen Göck  
Deniz Guenduez  
Janina Hakenmueller  
James Harrington  
Maximilian Hartmann  
Luisa Hoetzsch  
Khokon Hossen  
Shuyuan Hu  
Thomas Hügler  
Carlos Jaramillo  
Armelle Jardin-Blicq  
Florian Joerg  
Vikas Joshi  
Oliver Kaleja  
Jonas Karthein

Grigorios Katsoulakos  
Johannes King  
Sergei Kobzak  
Kathrin Kromer  
Steffen Kühn  
Niels Kurz  
Dominik S. Lentrodt  
Hannes Lindenblatt  
Bing Liu  
Chao Ma  
Alexander Magunia  
Ana Denhi Martinez Farfan  
Ramin Marx  
Severin Meister  
Silva Mezinska  
Deepthy Maria Mootheril  
Damian Müll  
Janko Nauta  
Felix Nüßlein  
Jan-Hendrik Oelmann  
Laura Olivera Nieto  
Daniel Paul  
Giada Peron  
Veronica Pizzella  
Sascha Rau  
Ludwig Rauch  
Marc Rebholz  
Nils Rehbehn  
Jonas Rezacek  
Thomas Rink  
Michael Rosner  
Edna L. Ruiz Velasco  
Natascha Rupp  
Patrick Rupprecht  
Sofiane Saadi  
Simon Sailer  
Tim Sailer  
Archana Sampath  
Maitreyi Sangal  
Georg Schmid  
Tobias Schierhuber  
Frans Schotsch  
Antonia Schneider  
Rima Schüssler  
Mario Schütt  
Nils Schween  
Christoph Schweiger  
Rodric Seutin  
Farshad Shobeiry  
Clarissa Martins Siqueira  
Hemkumar Srinivas  
Julian Stark  
Simon Steinmaßl  
Xiaona Sun  
Pooja Surajbali  
Karla Maria Tame Narvaez  
Valentin Tenorth  
Florian Trost  
Igor Valuev  
Susan van der Woude

Oliver Wack  
Jieshuang Wang  
Kai Wang  
Christian Warnecke  
Johannes Welter  
Markus Wiesinger  
Christian Will  
Lukas Wolff  
Yu Fung Wong  
Weiyu Zhang  
Jiaqi Zhou  
Aigars Znotins  
Justus Zorn

## Master and Bachelor Students

Stefano Amberg  
Shah Jalali Begum  
Sandra Bogen  
Julian Bollig  
Hendrik Borrás  
Jan S. Breidenbach  
Edgar Cristopher Cortes Garcia  
Stefan Dickopf  
Kilian Dietrich  
Eugen Dizer  
Joscha Paul Duchscherer  
Fabian Egersdörfer  
David Elsing  
Leo Engelfried  
Sven Fabian  
Patrick Friebel  
Judith Gafriller  
Hyoyin Gan  
Ben Gebhardt  
Miriam Gerharz  
Philipp Gernandt  
Ferdinand Gleixner  
Álvaro Pastor Gutiérrez  
Lena Haaga  
Felix Hahne  
Tobias Heldt  
Felix Henrich  
Christian Hensel  
Benedikt Herkommer  
Pablo Herrero Gomez  
Matias Hersch  
Felix Herzog  
Jonas Hörl  
Arso Ivanovic  
Daniel Jimenez Tejero  
Metty Jung  
Stefanie Kerbstadt  
Christiane Klein  
Sophie Klett  
Charlotte König  
Sandro Krämer  
Jakob Krummeich  
Jeffrey Kuntz  
Nick Lackmann

Daniel Lange  
Fabian Lauble  
Maja Lecher  
Vivienne Leidel  
Tobias Leopold  
Nikola Lukezic  
Reyhaneh Majidi  
Tim A. Meinhold  
Alexandra Molodtsova  
Marius Müller  
Christoph Otte  
Ronja Pappenberger  
Andreas Persch  
Mona Pötter  
Tobias Podszus  
Gregor Ramien  
Marius Rimmler  
Sabine Rockenstein  
Philipp Saake  
Viviane Schmidt  
Patrizia Schoch  
Oliver Scholer  
Sebastian Spaniol  
Lukas Spieß  
Jakob Stegmann  
Timo Steinsberger  
Moto Togawa  
Heiko Walter  
Piet Hein van den Heuvel  
Espen van der Meeren  
Moritz Marcel Weegen  
Robert-Alexander Windberger  
Daniel Winkler  
Ilja Zebergs

## Technical and Administrative Staff

Ruth Alberts  
Sabrina Apfel  
Theo Apfel  
Marie-Annabel Arnold  
Feyyaz Ayhan  
Sibel Babacan  
Horst Backfisch  
Miquel Barceló Griñó  
Giosue Basile  
Martina Bauer  
Jörg Baumgart  
Martin Beckmann  
Angelika Bernhardt  
Walfried Bernhardt  
Monika Blümel  
Hannes Bonet  
Sebastian Bös  
Natascha Bruch  
Maximilian Bruder  
Thomas Busch  
Victoria Michelle Büttner  
Doris Cerny  
Marcel Chardon

Ruth Crespo López-Urrutia  
Jakob Dahlinger  
Alexander von der Dellen  
Lukas Dengel  
Fabio Dimitriou  
Lucio Di Paolo  
Denitsa Dzhigova  
Zoila Eisenhauer  
Alexander Engels  
Rolf Epking  
Nils Falter  
Stephan Flicker  
Christian Föhr  
Steffen Form  
Tina Frydlewicz  
Hans-Philipp Fuchs  
Peter Gaa  
Peter Gahn  
Vincent Gahn  
Frank Garrecht  
Annegret Gawenda  
Marion Geier  
Sam Glasner  
Andrea Graf  
Benjamin Gramlich  
Michael Grimm  
Ranko Grimm  
Dennis Groß  
Kristian Haberkorn  
Fabian Haist  
Kirstin Halama  
Nicolas Hartwig  
Kevin Hebert  
Lukas Heckmann  
Werner Heibel  
Alexandra Heid  
Rainer Heldner  
Reinhard Hofacker  
Sven Hoffmann  
Katrin Hohmeyer  
Daniel Hollain  
Ludmila Hollmach  
Reka Horvath  
Dietmar Hübner  
Sebastian Hummel  
Tim Hunger  
Patrick Ihle  
Klaus Jänner  
Luca Oliver Jokiel  
Frank Jungmann  
Thomas Kaffitz  
Christian Kaiser  
Dirk Kaiser  
Ruben Kankanyan  
Lana Karagujanov  
Nico Keim  
Dr. Thomas Kihm  
Dr. Markus Klaiber  
Oliver Kneis  
Jan Knopf

Uwe Köhler  
Elke Kolb  
Stefanie Kolb  
Manfred König  
Marcel König  
Oliver Koschorreck  
Nils Krappmann  
Frank Kraus  
Christian Krczal  
Samira Kugler  
Bernd Künzer  
Nicole Künzler  
Ralf Lackner  
Michael Lamade  
Willi Lasarenko  
David Leitner  
Jürgen Lorentz  
Marco Lösser  
Rainer Mark  
Domenik Marschall  
Jan Andreas Martin  
Tim Maschek  
Jochen Maßholder  
Jason Mather  
Felix Mattern  
Michael Meisel  
Sandra Mergenthaler  
Nikola Mollov  
Bettina Mörk  
Maximilian Mouhlen  
Frank Müller  
Daniel Müller  
Albrecht Nees  
Jaqueline Nees  
Christian Neureuther  
Marc Niedderer  
Dennis Obieglo  
Frank Owesle  
Daniel Pfanner  
Steven Pfeifer  
Kristine Pöhner  
Michael Reißfelder  
Annabelle Richter  
Christine von Riegen  
Claudia Ries  
Anja Rittmann-Berneiser  
Max Rostock  
Florian Säubert  
Klaus-Dieter Sauer  
Monika Sauter  
Bernd Schaller  
Christine Schati  
Elmar Scheurich  
Thomas Schiffmann  
Jan Schildhorn  
Stefan Schmidt  
Ralf Schmittbauer  
Joey Schneider  
Thomas Schwab  
Arnold Schwarz

Britta Schwarz  
Andreas Seltner  
Thorsten Spranz  
Karsten Stähle  
Annika Stark  
Yannick Steinhauser  
Achim Stephan  
Jochen Stephan  
Nina Stephan  
Herbert Strecker  
Tilman Streib  
Martina Strunz  
Nico Tenyer  
Hermann Tietz  
Anica Till  
Friedrich Töpfer  
Maximilian Trebis  
Steffen Vogel  
Gernot Vogt  
Yanik Vones  
Christina Vragas  
Frank Wagner  
Thomas Wagner  
Fabian Walter  
Silvia Waniek  
Thomas Weber  
Gabriele Weese  
Dominik Weinmann  
Vincent Luis Weishuhn  
Michael Weiß Mare  
Susanne Weißmann  
Nico Welker  
Katherina Wenzel  
Peter Werle  
Erik Werner  
Jonas Westermann  
Volker Wieder  
Norbert Winkler  
Markus Woche  
Steffen Wolf  
Natalie Zahn  
Uwe Zeiske  
Peter Zepf  
Ralph Zilly  
Kevin Zink  
Susanne Zott

## Guest Scientists

*Persons staying at least for four weeks at the institute:*

Lina Alasfar (Syria)  
Lucia Ambroggi (Italy)  
Prof. Giacomo de Angelis (Italy)  
Dr. Osvaldo Aquines Gutiérrez (Mexico)  
Miguel A. Araya Arguedas (Costa Rica)  
Prof. Dr. Frank Arnold (Germany)  
Prof. Hamlet K. Avetissian (Armenia)  
Dr. Pouya Bakhti (Iran)  
Prof. Michael Bantel (Germany)  
Maxim Barkov (Russia)

Marc-André Besel (Germany)  
Dr. Heiko Bauke (Germany)  
Dr. Alberto Benedetti (Italy)  
Olesia Bezrodnova (Russia)  
Marta Borchiellini (Italy)  
Luke Bowman (Australia)  
Jacqueline Catalano (Germany)  
Dr. Stefano M. Cavaletto (Italy)  
Silvia Celli (Italy)  
Salvador Centelles Chuliá (Spain)  
Dr. Siddhartha Chattopadhyay (India)  
Dr. Yue-Yue Chen (China)  
Yu-Hsueh Chen (Taiwan)  
Roland M. Crocker (Australia)  
Prof. Ni Cui (China)  
Dr. Vincent Debierre (France)  
Fabrizio Del Gaudio (Italy)  
Evgenii Derishev (Russia)  
Connor Duffy (United Kingdom)  
Guglielmo Faggioli (Italy)  
Prof. Dr. Yasaman Farzan (Iran)  
Prof. Keisuke Fujii (Japan)  
Yui Fujikawa (Japan)  
Jeremy Gallant (Australia)  
Dr. Sebastian George (Germany)  
Cecilia Giavoni (Italy)  
Dr. André Gontijo Campos (Brazil)  
Dr. Leigh Graham (Canada)  
Rentong Guo (China)  
Takereh Hamedi (Iran)  
Juliane Haug (Germany)  
Pei-Lun He (China)  
Dr. Kilian P. Heeg (Germany)  
Paul Hill (Germany)  
Srikrishnaa Jayaraman (India)  
Dr. Luling Jin (China)  
Prof. Beatriz Jurado (Spain)  
Dr. Alexander Kartavtsev (Russia)  
Inga K. Kerber (Germany)  
Alistair Kershaw (United Kingdom)  
Dr. Michael Klaiber (Germany)  
Dr. Xiangjin Kong (China)  
Dr. Petr Krachkov (Russia)  
Dr. Claude Krantz (Luxemburg)  
Prof. Dr. Dr. h.c. Wolfgang Krätschmer (Germany)  
Prof. Mikhail Krivoruchenko (Russia)  
Prof. Dr. Jisuke Kubo (Japan)  
Dr. Naveen Kumar (India)  
Samir Kusmic (USA)  
Jon Lapington (United Kingdom)  
Steven Leach (United Kingdom)  
Meng Lok Lei (Germany)  
Prof. Jian-Xing Li (China)  
Dr. Yan-Fei Li (China)  
Prof. Wen-Te Liao (Taiwan)  
Kangrui Liu (China)  
Ruoyu Liu (China)  
Dr. Yuri Litvinov (Germany)  
Misha Lopez (Mexico)  
Alexey Lubashevskiy (Russia)

Dr. Qingzheng Lyu (China)  
César Mata (Mexico)  
Andreas Maul (Germany)  
Prof. Nikolay Minkov (Bulgaria)  
Prof. Rainer Neugart (Germany)  
Fabien Niel (France)  
Prof. Yuri Novikov (Russia)  
Amid Nayerhoda (Iran)  
Yuki Nakamura (Japan)  
Cesar A. Ocampo Pavez (Chile)  
Dr. Josefa Oehm (Germany)  
Akira Okumura (Japan)  
Dr. Natalia S. Oreshkina (Russia)  
Zaza Osmanov (Georgia)  
Stefan Paul (Germany)  
Baibhab Pattnaik (India)  
Cristina C. Popescu (United Kingdom)  
Yago Philippe Porto Silva (Brazil)  
Ksenia Ptitsyna (Russia)  
Sangeetha Puthukodath (India)  
Dr. Branimir Radovic (Croatia)  
Dr. Erez Raicher (Israel)  
Prof. Dr. Soebur Razzaque (USA)  
Mark Rushton (United Kingdom)  
Prof. Yousef I. Salamin (Palestine)  
Dr. Daniel Savin (USA)  
Lars L. Schaaf (Germany)  
Prof. Lutz Schweikhard (Germany)  
Prof. Michael Schulz (USA)  
Dr. Tahir Shaaran (Britain)  
Dr. Rashid Shaisultanov (Russia)  
Baibhaw K. Singh (India)  
Dr. Ujjwal Sinha (India)  
Dr. Oleg D. Skoromnik (Russia)  
Anatoly Smolnikov (Russia)  
Prof. Dr. Ulrich Straumann (Switzerland)  
Danila Stukov (Russia)  
Dr. Matteo Tamburini (Italy)  
Yanis Trouyet (France)  
Naomi Tsuji (Japan)  
Prof. Ilya I. Tupitsyn (Russia)  
Prof. Xavier Urbain (Belgium)  
Viacheslav Vedenev (Russia)  
Arjun Voruganti (India/USA)  
Dr. Feng Wan (China)  
Chun-An Wang (Taiwan/USA)  
Yu Wang (China)  
Dr. Meng Wen (China)  
Dr. Tobias N. Wistisen (Denmark)  
Pin Wu (Ireland)  
Dr. Yuanbin Wu (China)  
Dr. Xunjie Xu (China)  
Dr. Carlos Esteban Yaguna Toro (Columbia)  
Prof. Vladimir A. Yerokhin (Russia)  
Hiroki Yoneda (Japan)  
Davit Zargaryan (Armenia)  
Dr. Jacek Zatorski (Poland)  
Mikhail Zavertiaev (Russia)  
Yanning Zhang (China)  
Vladimir Zirakashvili (Russia)

# Publications 2017

## Journals Articles

- Aarts, G., Aichelin, J., Allton, C., Arnaldi, R., Bass, S. A., Bedda, C., ... Zhuang, P. (2017): Heavy-flavor production and medium properties in high-energy nuclear collisions - What next? *European Physical Journal A*, 53(5), 93. doi:10.1140/epja/i2017-12282-9
- Aartsen, M. G., Ackermann, M., Adams, J., Aguilar, J. A., Ahlers, M., Ahrens, M., ... Soumagnac, M. (2017): Multiwavelength follow-up of a rare IceCube neutrino multiplet. *Astronomy and Astrophysics*, 607, A115. doi:10.1051/0004-6361/201730620
- Abada, A., Arcadi, G., Domcke, V., & Lucente, M. (2017): Neutrino masses, leptogenesis and dark matter from small lepton number violation? *Journal of Cosmology and Astroparticle Physics*, 2017(12), 024. doi:10.1088/1475-7516/2017/12/024
- Abdalla, H., Abramowski, A., Aharonian, F., Benkhali, F. A., Akhperjanian, A. G., Andersson, T., ... Petroff, E. (2017): First limits on the very-high energy gamma-ray afterglow emission of a fast radio burst HESS observations of FRB 150418. *Astronomy and Astrophysics*, 597, A115. doi:10.1051/0004-6361/201629117
- Abdalla, H., Abramowski, A., Aharonian, F., Benkhali, F. A., Akhperjanian, A. G., Andersson, T., ... Wood, K. S. (2017): Gamma-ray blazar spectra with HESS II mono analysis: The case of PKS2155-304 and PG1553+113. *Astronomy and Astrophysics*, 600, A89. doi:10.1051/0004-6361/201629427
- Abdalla, H., Abramowski, A., Aharonian, F., Benkhali, F. A., Akhperjanian, A. G., Andersson, T., ... Zywucka, N. (2017): Characterizing the gamma-ray long-term variability of PKS2155 304 with HESS and Fermi-LAT. *Astronomy and Astrophysics*, 598, A39. doi:10.1051/0004-6361/201629419
- Abdalla, H., Abramowski, A., Aharonian, F., Benkhali, F. A., Akhperjanian, A. G., Andersson, T., ... Zywucka, N. (2017): Measurement of the EBL spectral energy distribution using the VHE gamma-ray spectra of HESS blazars. *Astronomy and Astrophysics*, 606, A59. doi:10.1051/0004-6361/201731200
- Abdalla, H., Abramowski, A., Aharonian, F., Benkhali, F. A., Anguner, E. O., Arakawa, M., ... Zywucka, N. (2017): TeV Gamma-Ray Observations of the Binary Neutron Star Merger GW170817 with HESS. *Astrophysical Journal, Letters*, 850(2), L22. doi:10.3847/2041-8213/aa97d2
- Abdollahi, S., Ackermann, M., Ajello, M., Atwood, W. B., Baldini, L., Barbiellini, G., ... Zimmer, S. (2017): Cosmic-ray electron-positron spectrum from 7 GeV to 2 TeV with the Fermi Large Area Telescope. *Physical Review D*, 95(8), 082007. doi:10.1103/PhysRevD.95.082007
- Abeysekara, A. U., Albert, A., Alfaro, R., Alvarez, C., Alvarez, J. D., Arceo, R., ... Zhou, H. (2017): Daily Monitoring of TeV Gamma-Ray Emission from Mrk 421, Mrk 501, and the Crab Nebula with HAWC. *Astrophysical Journal*, 841(2), 100. doi:10.3847/1538-4357/aa729e
- Abeysekara, A. U., Albert, A., Alfaro, R., Alvarez, C., Alvarez, J. D., Arceo, R., ... Zhang, H. (2017): Extended gamma-ray sources around pulsars constrain the origin of the positron flux at Earth. *Science*, 358(6365), 911-914. doi:10.1126/science.aan4880
- Abeysekara, A. U., Albert, A., Alfaro, R., Alvarez, C., Alvarez, J. D., Arceo, R., ... Zhou, H. (2017): The 2HWC HAWC Observatory Gamma-Ray Catalog. *Astrophysical Journal*, 843(1), 40. doi:10.3847/1538-4357/aa7556



- Abeysekara, A. U., Albert, A., Alfaro, R., Alvarez, C., Alvarez, J. D., Arceo, R., ... Zhou, H. (2017): Search for Very High-energy Gamma Rays from the Northern Fermi Bubble Region with HAWC. *Astrophysical Journal*, 842(2), 85. doi:10.3847/1538-4357/aa751a
- Abeysekara, A. U., Albert, A., Alfaro, R., Alvarez, C., Alvarez, J. D., Arceo, R., ... Zhou, H. (2017): Observation of the Crab Nebula with the HAWC Gamma-Ray Observatory. *Astrophysical Journal*, 843(1), 39. doi:10.3847/1538-4357/aa7555
- Abeysekara, A. U., Alfaro, R., Alvarez, C., Alvarez, J. D., Arceo, R., Arteaga-Velazquez, J. C., ... Zhou, H. (2017): The HAWC Real-time Flare Monitor for Rapid Detection of Transient Events. *Astrophysical Journal*, 843(2), 116. doi:10.3847/1538-4357/aa789f
- Abgrall, N., Abramov, A., Abrosimov, N., Abt, I., Agostini, M., Agartioglu, M., ... Zuzel, G. (2017): The Large Enriched Germanium Experiment for Neutrinoless Double Beta Decay (LEGEND). *AIP Conference Proceedings*, 1894, 020027-1. doi:10.1063/1.5007652
- Abraham, T., Almazan, H., dos Anjos, J. C., Appel, S., Baussan, E., Bekman, I., ... Zimmer, V. (2017): Cosmic-muon characterization and annual modulation measurement with Double Chooz detectors. *Journal of Cosmology and Astroparticle Physics*, 2017(2), 017. doi:10.1088/1475-7516/2017/02/017
- Acero, F., Aloisio, R., Amans, J., Amato, E., Antonelli, L. A., Aramo, C., ... Zorn, J. (2017): Prospects for Cherenkov Telescope Array Observations of the Young Supernova Remnant RX J1713.7-3946. *Astrophysical Journal*, 840(2), 74. doi:10.3847/1538-4357/aa6d67
- Ackermann, M., Ajello, M., Albert, A., Baldini, L., Ballet, J., Barbiellini, G., ... Zhou, M. (2017): Observations of M31 and M33 with the Fermi Large Area Telescope: A Galactic Center Excess in Andromeda? *Astrophysical Journal*, 836(2), 208. doi:10.3847/1538-4357/aa5c3d
- Adamova, D., Agakichiev, G., Andronic, A., Antonczyk, D., Appelshaeuser, H., Belaga, V., ... Yurevich, V. (2017): Triangular flow of negative pions emitted in PbAu collisions at  $\sqrt{s(NN)}=17.3$  GeV. *Nuclear Physics A*, 957, 99–108. doi:10.1016/j.nuclphysa.2016.08.002
- Adhikari, R., Agostini, M., Ky, N. A., Araki, T., Archidiacono, M., Bahr, M., ... Zuber, K. (2017): A White Paper on keV sterile neutrino Dark Matter. *Journal of Cosmology and Astroparticle Physics*, (1), 025. doi:10.1088/1475-7516/2017/01/025
- Aghion, S., Amsler, C., Ariga, A., Ariga, T., Bonomi, G., Braeunig, P., ... Zurlo, N. (2017): Measurement of antiproton annihilation on Cu, Ag and Au with emulsion films. *Journal of Instrumentation*, 12, P04021. doi:10.1088/1748-0221/12/04/P04021
- Aghion, S., Amsler, C., Ariga, T., Bonomi, G., Brusa, R. S., Caccia, M., ... Lyckegaard, F. (2017): Characterization of a transmission positron/positronium converter for antihydrogen production. *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms*, 407, 55–66. doi:10.1016/j.nimb.2017.05.059
- Agostini, M., Allardt, M., Bakalyarov, A. M., Balata, M., Barabanov, I., Baudis, L., ... Zuzel, G. (2017): Limits on uranium and thorium bulk content in GERDA Phase I detectors. *Astroparticle Physics*, 91, 15–21. doi:10.1016/j.astropartphys.2017.03.003
- Agostini, M., Allardt, M., Bakalyarov, A. M., Balata, M., Barabanov, I., Baudis, L., ... Zuzel, G. (2017): Background-free search for neutrinoless double-beta decay of Ge-76 with GERDA. *Nature*, 544(7648), 47–+. doi:10.1038/nature21717

- Agostini, M., Altenmueller, K., Appel, S., Atroshchenko, V., Bellini, G., Benziger, J., ... Zuzel, G. (2017): Borexino's search for low-energy neutrino and antineutrino signals correlated with gamma-ray bursts. *Astroparticle Physics*, 86, 11–17. doi:10.1016/j.astropartphys.2016.10.004
- Agostini, M., Bakalyarov, A. M., Balata, M., Barabanov, I., Baudis, L., Bauer, C., ... Zuzel, G. (2017): Search for Neutrinoless Double Beta Decay with GERDA Phase II. *AIP Conference Proceedings*, 1894, 020012. doi:10.1063/1.5007637
- Agostini, M., Altenmueller, K., Appel, S., Bellini, G., Benziger, J., Bick, D., ... Zuzel, G. (2017): Borexino: geo-neutrino measurement at Gran Sasso, Italy. *Annals of Geophysics*, 60(1), S0114. doi:10.4401/ag-7389
- Aharonian, F. A., Barkov, M. V., & Khangulyan, D. (2017): Scenarios for Ultrafast Gamma-Ray Variability in AGN. *Astrophysical Journal*, 841(1), 61. doi:10.3847/1538-4357/aa7049
- Aharonian, F. A., Akamatsu, H., Akimoto, F., Allen, S. W., Angelini, L., Audard, M., ... Zoghbi, A. (2017): Solar abundance ratios of the iron-peak elements in the Perseus cluster. *Nature*, 551(7681), 478–+. doi:10.1038/nature24301
- Aharonian, F. A., Sun, X., & Yang, R. (2017): Energy distribution of relativistic electrons in the young supernova remnant G1.9+0.3. *Astrophysics & Astronomy*, 603, A7. doi:10.1051/0004-6361/201630212
- Ahnen, M. L., Ansoldi, S., Antonelli, L. A., Antoranz, P., Arcaro, C., Babic, A., ... Reinthal, R. (2017): MAGIC detection of very high energy gamma-ray emission from the low-luminosity blazar 1ES 1741+196. *Monthly Notices of the Royal Astronomical Society*, 468(2), 1534–1541. doi:10.1093/mnras/stx472
- Ahnen, M. L., Ansoldi, S., Antonelli, L. A., Antoranz, P., Arcaro, C., Babic, A., ... Zanin, R. (2017): Very-high-energy gamma-ray observations of the Type Ia Supernova SN 2014J with the MAGIC telescopes. *Astronomy and Astrophysics*, 602, A98. doi:10.1051/0004-6361/201629574
- Ahnen, M. L., Ansoldi, S., Antonelli, L. A., Arcaro, C., Babic, A., Banerjee, B., ... Zanin, R. (2017): Search for very high-energy gamma-ray emission from the microquasar Cygnus X-1 with the MAGIC telescopes. *Monthly Notices of the Royal Astronomical Society*, 472(3), 3474–3485. doi:10.1093/mnras/stx2087
- Akhmedov, E. K. (2017): Do non-relativistic neutrinos oscillate? *Journal of High Energy Physics : JHEP*, 2017(7), 070. doi:10.1007/JHEP07(2017)070
- Akhmedov, E. K., Kopp, J., & Lindner, M. (2017): Collective neutrino oscillations and neutrino wave packets. *Journal of Cosmology and Astroparticle Physics*, 2017(9), 017. doi:10.1088/1475-7516/2017/09/017
- Alanne, T., Franzosi, D. B., & Frandsen, M. T. (2017): Partially composite Goldstone Higgs boson. *Physical Review D*, 96(9), 095012. doi:10.1103/PhysRevD.96.095012
- Albert, A., Funk, S., Katagiri, H., Kawashima, T., Murphy, M., Okumura, A., ... Wu, T. (2017): TARGET 5: A new multi-channel digitizer with triggering capabilities for gamma-ray atmospheric Cherenkov telescopes. *Astroparticle Physics*, 92, 49–61. doi:10.1016/j.astropartphys.2017.05.003
- Alfaro, R., Alvarez, C., Alvarez, J. D., Arceo, R., Arteaga-Velazquez, J. C., Avila Rojas, D., ... Zhou, H. (2017): Search for Very-high-energy Emission from Gamma-Ray Bursts Using the First 18 Months of Data from the HAWC Gamma-Ray Observatory. *Astrophysical Journal*, 843(2), 88. doi:10.3847/1538-4357/aa756f
- Althubiti, N. A., Atanasov, D., Blaum, K., Cocolios, T. E., Goodacre, T. D., Farooq-Smith, G. J., ... Zuber,

- K. (2017): Spectroscopy of the long-lived excited state in the neutron-deficient nuclides  $^{195,197,199}\text{Po}$  by precision mass measurements. *Physical Review C*, 96(4), 044325. doi:10.1103/PhysRevC.96.044325
- Alves, A., Arcadi, G., Dong, P. V., Duarte, L., Queiroz, F., & Valle, J. W. F. (2017): Matter-parity as a residual gauge symmetry: Probing a theory of cosmological dark matter. *Physics Letters B*, 772, 825–831. doi:10.1016/j.physletb.2017.07.056
- Alves, A., Arcadi, G., Mambrini, Y., Profumo, S., & Queiroz, F. S. (2017): Augury of darkness: the low-mass dark  $Z'$  portal. *Journal of High Energy Physics : JHEP*, 2017(4), 164. doi:10.1007/JHEP04(2017)164
- Amaro, P., Shah, C., Steinbrügge, R. F., Beilmann, C., Bernitt, S., Crespo López-Urrutia, J. R., & Tashenov, S. (2017): State-selective influence of the Breit interaction on the angular distribution of emitted photons following dielectronic recombination. *Physical Review A*, 95(2), 022712. doi:10.1103/PhysRevA.95.022712
- Angelescu, A., & Arcadi, G. (2017): Dark matter phenomenology of SM and enlarged Higgs sectors extended with vector-like leptons. *European Physical Journal C*, 77(7), 456. doi:10.1140/epjc/s10052-017-5015-2
- Anguner, E. O., Aharonian, F., Bordas, P., Casanova, S., Hoischen, C., Oya, I., & Ziegler, A. (2017): HESS J1826-130: A Very Hard gamma-Ray Spectrum Source in the Galactic Plane. *AIP Conference Proceedings*, 1792, 040024. doi:10.1063/1.4968928
- Aprile, E., Aalbers, J., Agostini, F., Alfonsi, M., Althueser, L., Amaro, F. D., ... Zhu, T. (2017): Search for bosonic super-WIMP interactions with the XENON100 experiment. *Physical Review D*, 96(12), 122002. doi:10.1103/PhysRevD.96.122002
- Aprile, E., Aalbers, J., Agostini, F., Alfonsi, M., Amaro, F. D., Anthony, M., ... Zhang, Y. (2017): The XENON1T dark matter experiment. *European Physical Journal C*, 77(12), 881. doi:10.1140/epjc/s10052-017-5326-3
- Aprile, E., Aalbers, J., Agostini, F., Alfonsi, M., Amaro, F. D., Anthony, M., ... Zhu, T. (2017): First Dark Matter Search Results from the XENON1T Experiment. *Physical Review Letters*, 119(18), 181301. doi:10.1103/PhysRevLett.119.181301
- Aprile, E., Aalbers, J., Agostini, F., Alfonsi, M., Amaro, F. D., Anthony, M., ... Nisi, S. (2017): Material radioassay and selection for the XENON1T dark matter experiment. *European Physical Journal C - Particles and Fields*, 77(12), 890. doi:10.1140/epjc/s10052-017-5329-0
- Aprile, E., Aalbers, J., Agostini, F., Alfonsi, M., Amaro, F. D., Anthony, M., ... Cristescu, I. (2017): Removing krypton from xenon by cryogenic distillation to the ppq level. *European Physical Journal C*, 77(5), 275. doi:10.1140/epjc/s10052-017-4757-1
- Aprile, E., Aalbers, J., Agostini, F., Alfonsi, M., Amaro, F. D., Anthony, M., ... Zhang, Y. (2017): Search for Electronic Recoil Event Rate Modulation with 4 Years of XENON100 Data. *Physical Review Letters*, 118(10), 101101. doi:10.1103/PhysRevLett.118.101101
- Aprile, E., Aalbers, J., Agostini, F., Alfonsi, M., Amaro, F. D., Anthony, M., ... Zhang, Y. (2017): Search for magnetic inelastic dark matter with XENON100. *Journal of Cosmology and Astroparticle Physics*, 2017(10), 039. doi:10.1088/1475-7516/2017/10/039
- Aprile, E., Aalbers, J., Agostini, F., Alfonsi, M., Amaro, F. D., Anthony, M., ... Farmer, B. (2017): Effective field theory search for high-energy nuclear recoils using the XENON100 dark matter detector. *Physical Review D*, 96(4), 042004. doi:10.1103/PhysRevD.96.042004

- Aprile, E., Aalbers, J., Agostini, F., Alfonsi, M., Amaro, F. D., Anthony, M., ... Zhang, Y. (2017): Search for WIMP inelastic scattering off xenon nuclei with XENON100. *Physical Review D*, 96(2), 022008. doi:10.1103/PhysRevD.96.022008
- Aprile, E., Aalbers, J., Agostini, F., Alfonsi, M., Amaro, F. D., Anthony, M., ... Zhang, Y. (2017): Search for two-neutrino double electron capture of Xe-124 with XENON100. *Physical Review C*, 95(2), 024605. doi:10.1103/PhysRevC.95.024605
- Aprile, E., Aalbers, J., Agostini, F., Alfonsi, M., Amaro, F. D., Anthony, M., ... Cristescu, I. (2017): Online  $^{222}\text{Rn}$  removal by cryogenic distillation in the XENON100 experiment. *European Physical Journal C*, 77(6), 358. doi:10.1140/epjc/s10052-017-4902-x
- Aprile, E., Aalbers, J., Agostini, F., Alfonsi, M., Amaro, F. D., Anthony, M., ... Zhang, Y. (2017): Results from a calibration of XENON100 using a source of dissolved radon-220. *Physical Review D*, 95(7), 072008. doi:10.1103/PhysRevD.95.072008
- Arcadi, G. (2017): Impact of next future Direct Detection experiments on Dark Portals and beyond. *EPJ Web of Conferences*, 136, 05003. doi:10.1051/epjconf/201713605003
- Arcadi, G., Ghosh, P., Mambrini, Y., Pierre, M., & Queiroz, F. (2017): Z' portal to Chern-Simons Dark Matter. *Journal of Cosmology and Astroparticles Physics*, 2017(11), 020. doi:10.1088/1475-7516/2017/11/020
- Arcadi, G., Gross, C., Lebedev, O., Pokorski, S., & Toma, T. (2017): Evading direct dark matter detection in Higgs portal models. *Physics Letters B*, 769, 129–133. doi:10.1016/j.physletb.2017.03.044
- Arcadi, G., Lindner, M., Mambrini, Y., Pierre, M., & Queiroz, F. (2017): GUT models at current and future hadron colliders and implications to dark matter searches. *Physics Letters B*, 771, 508–514. doi:10.1016/j.physletb.2017.05.023
- Arcadi, G., Queiroz, F., & Martins Siqueira, C. (2017): The semi-Hooperon: Gamma-ray and anti-proton excesses in the Galactic Center. *Physics Letters B*, 775, 196–205. doi:10.1016/j.physletb.2017.10.065
- Arkhipov, M. V., Arkhipov, R. M., Pakhomov, A. V., Babushkin, I. V., Demircan, A., Morgner, U., & Rosanov, N. N. (2017): Generation of unipolar half-cycle pulses via unusual reflection of a single-cycle pulse from an optically thin metallic or dielectric layer. *Optics Letters*, 42(11), 2189–2192. doi:10.1364/OL.42.002189
- Atanasov, D., Blaum, K., Bosch, F., Brandau, C., Bühler, P., Cakirli, R. B., ... Zhou, X. H. (2017): Studies at the border between nuclear and atomic physics: Weak decays of highly charged ions. *Journal of Physics: Conference Series*, 875, 012008. doi:10.1088/1742-6596/875/2/012008
- Atanasov, D., Beck, D., Blaum, K., Borgmann, C., Cakirli, R. B., Eronen, T., ... Zuber, K. (2017): Precision mass measurements of cesium isotopes—new entries in the ISOLTRAP chronicles. *Journal of Physics G: Nuclear and Particle Physics*, 44(4), 044004. doi:10.1088/1361-6471/aa5a20
- Balazs, C., Conrad, J., Farmer, B., Jacques, T., Li, T., Meyer, M., ... Sanchez-Conde, M. A. (2017): Sensitivity of the Cherenkov Telescope Array to the detection of a dark matter signal in comparison to direct detection and collider experiments. *Physical Review D*, 96(8), 083002. doi:10.1103/PhysRevD.96.083002
- Bambhaniya, G., Dev, B., Goswami, S., Khan, S., & Rodejohann, W. (2017): Naturalness, vacuum stability, and leptogenesis in the minimal seesaw model. *Physical Review D*, 95(9), 095016. doi:10.1103/PhysRevD.95.095016

- Barducci, D., & Helmboldt, A. (2017): Quark flavour-violating Higgs decays at the ILC. *Journal of High Energy Physics : JHEP*, 2017(12), 105. doi:10.1007/JHEP12(2017)105
- Barnett, S. M., Beige, A., Ekert, A., Garraway, B. M., Keitel, C. H., Kendon, V., ... Kim, M. S. (2017): Journeys from quantum optics to quantum technology. *Progress in Quantum Electronics*, 54, 19–45. doi:10.1016/j.pquantelec.2017.07.002
- Barrow, P., Baudis, L., Cichon, D., Danisch, M., Franco, D., Kaether, F., ... Wulf, J. (2017): Qualification tests of the R11410-21 photomultiplier tubes for the XENON1T detector. *Journal of Instrumentation*, 12, P01024. doi:10.1088/1748-0221/12/01/P01024
- Bednarek, W., Blanch, O., Cortina, J., de Ona Wilhelmi, E., Hadasch, D., Lopez Coto, R., ... Zanin, R. (2017): MAGIC VHE Gamma-Ray Observations Of Binary Systems. *AIP Conference Proceedings*, 1792, 040016. doi:10.1063/1.4968920
- Bilous, P. V., Kazakov, G. A., Moore, I. D., Schumm, T., & Pálffy, A. (2017): Internal conversion from excited electronic states of  $^{229}\text{Th}$  ions. *Physical Review A*, 95(3), 032503. doi:10.1103/PhysRevA.95.032503
- Birkhan, J., Miorelli, M., Bacca, S., Bassauer, S., Bertulani, C. A., Hagen, G., ... Tamii, A. (2017): Electric Dipole Polarizability of Ca-48 and Implications for the Neutron Skin. *Physical Review Letters*, 118(25), 252501. doi:10.1103/PhysRevLett.118.252501
- Bjoerkeroth, F., King, S. F., Schmitz, K., & Yanagida, T. T. (2017): Leptogenesis after chaotic sneutrino inflation and the supersymmetry breaking scale. *Nuclear Physics B*, 916, 688–708. doi:10.1016/j.nuclphysb.2017.01.017
- Blaum, K., Sturm, S., & Ulmer, S. (2017): In die Falle gegangen. *Physik Journal*, 16(1), 31–36.
- Bogovalov V, S., Aharonian, F., & Khangulyan, D. (2017): Formation of the pulsed TeV gamma-ray emission at the light cylinder. *AIP Conference Proceedings*, 1792, 040010. doi:10.1063/1.4968914
- Bonatsos, D., Assimakis, I. E., Minkov, N., Martinou, A., Cakirli, R. B., Casten, R. F., & Blaum, K. (2017): Proxy-SU(3) symmetry in heavy deformed nuclei. *Physical Review C*, 95(06), 064325. doi:10.1103/PhysRevC.95.064325
- Bonatsos, D., Assimakis, I. E., Minkov, N., Martinou, A., Sarantopoulou, S., Cakirli, R. B., ... Blaum, K. (2017): Analytic predictions for nuclear shapes, prolate dominance, and the prolate-oblate shape transition in the proxy-SU(3) model. *Physical Review C*, 95(06), 064326. doi:10.1103/PhysRevC.95.064326
- Bordas Coma, P., Dubus, G., Eger, P., Ernenwein, J.-P., Laffon, H., Mariaud, C., ... Zanin, R. (2017): Observations of Binary Systems with the HESS Telescopes. *AIP Conference Proceedings*, 1792, 040017. doi:10.1063/1.4968921
- Bordas Coma, P., Sun, X., Yang, R., Kafexhiu, E., & Aharonian, F. A. (2017): Gamma-ray emission towards SS433/W50. *AIP Conference Proceedings*, 1792, 040020. doi:10.1063/1.4968924
- Borge, M. J. G., & Blaum, K. (2017): Focus on Exotic Beams at ISOLDE: A Laboratory Portrait. *Journal of Physics G: Nuclear and Particle Physics*, 45(1), 010301. doi:10.1088/1361-6471/aa990f
- Bosch-Ramon, V., Barkov, M., Mignone, A., & Bordas Coma, P. (2017): HESS J0632+057: hydrodynamics and non-thermal emission. *Monthly Notices of the Royal Astronomical Society*, 471(1), L150–L154. doi:10.1093/mnras/slx124

- Bragin, S., Meuren, S., Keitel, C. H., & Di Piazza, A. (2017): High-Energy Vacuum Birefringence and Dichroism in an Ultrastrong Laser Field. *Physical Review Letters*, 119(25), 250403. doi:10.1103/PhysRevLett.119.250403
- Brodeur, M., Kwiatkowski, A. A., Drozdowski, M., Andreoiu, C., Burdette, D., Chaudhuri, A., ... Dilling, J. (2017): Precision mass measurements of magnesium isotopes and implications for the validity of the isobaric mass multiplet equation. *Physical Review C*, 96(3), 034316. doi:10.1103/PhysRevC.96.034316
- Bruenner, S., Cichon, D., Lindemann, S., Marrodán Undagoitia, T., & Simgen, H. (2017): Radon depletion in xenon boil-off gas. *European Physical Journal C - Particles and Fields*, 77(3), 143. doi:10.1140/epjcs/s10052-017-4676-1
- Brusa, R. S., Amsler, C., Ariga, T., Bonomi, G., Braeunig, P., Cabaret, L., ... Zurlo, N. (2017): The AEGIS experiment at CERN: measuring antihydrogen free-fall in earth's gravitational field to test WEP with antimatter. *Journal of Physics: Conference Series*, 791, 012014. doi:10.1088/1742-6596/791/1/012014
- Buck, C., Collin, A., Haser, J. A., & Lindner, M. (2017): Investigating the spectral anomaly with different reactor antineutrino experiments. *Physics Letters B*, 765, 159–162. doi:10.1016/j.physletb.2016.11.062
- Burger, C., Frisch, W. F., Kardas, T. M., Trubetskov, M., Pervak, V., Moshhammer, R., ... Wnuk, P. (2017): Compact and flexible harmonic generator and three-color synthesizer for femtosecond coherent control and time-resolved studies. *Optics Express*, 25(25), 31130–31139. doi:10.1364/OE.25.031130
- Bykov, A. M., Aharonian, F. A., Krassilchtchikov, A. M., Kholupenko, E. E., Aruev, P. N., Baiko, D. A., ... Chichagov, Y. V. (2017): Cherenkov Gamma-Ray Telescopes: Past, Present, Future. *The ALEGRO Project. Technical Physics*, 62(6), 819–836. doi:10.1134/S106378421706007X
- Campos, M. D., Queiroz, F., Yaguna, C. E., & Weniger, C. (2017): Search for right-handed neutrinos from dark matter annihilation with gamma-rays. *Journal of Cosmology and Astroparticle Physics*, 2017(7), 016. doi:10.1088/1475-7516/2017/07/016
- Campos, M., Cogollo, D., Lindner, M., Melo, T., Queiroz, F., & Rodejohann, W. (2017): Neutrino Masses and Absence of Flavor Changing Interactions in the 2HDM from Gauge Principles. *Journal of High Energy Physics : JHEP*, 2017(08), 092. doi:10.1007/JHEP08(2017)092
- Camus, N., Yakoboylu, E., Fechner, L., Klaiber, M., Laux, M., Mi, Y., ... Moshhammer, R. (2017): Experimental Evidence for Quantum Tunneling Time. *Physical Review Letters*, 119(2), 023201. doi:10.1103/PhysRevLett.119.023201
- Capasso, M., Condon, B., Coffaro, M., Cui, Y., Gottschall, D., Klochkov, D., ... Rowell, G. (2017): The TeV supernova remnant shell HESS J1731-347 and its surroundings. *AIP Conference Proceedings*, 1792, 040026. doi:10.1063/1.4968930
- Caravita, R., Aghion, S., Amsler, C., Bonomi, G., Brusa, R. S., Caccia, M., ... Zurlo, N. (2017): Advances in Ps Manipulations and Laser Studies in the AEGIS Experiment. *Acta Physica Polonica B*, 48(10), 1583–1592. doi:10.5506/APhysPolB.48.1583
- Carpeggiani, P., Reduzzi, M., Comby, A., Ahmadi, H., Kuehn, S., Calegari, F., ... Sansone, G. (2017): Vectorial optical field reconstruction by attosecond spatial interferometry. *Nature Photonics*, 11(6), 383–389. doi:10.1038/NPHOTON.2017.73
- Casanova, S. (2017): First year results from the HAWC observatory. *EPJ Web of Conferences*, 136, 03005. doi:10.1051/epjconf/201713603005

- Cavaletto, S., Harman, Z., Pfeifer, T., & Keitel, C. H. (2017): Deterministic strong-field quantum control. *Physical Review A*, 95(4), 043413. doi:10.1103/PhysRevA.95.043413
- Ceban, V., Longo, P., & Macovei, M. (2017): Fast phonon dynamics of a nanomechanical oscillator due to cooperative effects. *Physical Review A*, 95(2), 023806. doi:10.1103/PhysRevA.95.023806
- Cerruti, M., Bottcher, M., Chakraborty, N., Davids, I. D., Fuessling, M., Jankowsky, F., ... Zacharias, M. (2017): Target of Opportunity Observations of Blazars with HESS. *AIP Conference Proceedings*, 1792, 050029. doi:10.1063/1.4968975
- Chen, J.-W., Detmold, W., Lynn, J. E., & Schwenk, A. (2017): Short-Range Correlations and the EMC Effect in Effective Field Theory. *Physical Review Letters*, 119(26), 262502. doi:10.1103/PhysRevLett.119.262502
- Chen, X. C., Zeng, Q., Litvinov, Y. A., Tu, X. L., Walker, P. M., Wang, M., ... Zhang, Y. H. (2017): Statistical approaches to lifetime measurements with restricted observation times. *Physical Review C*, 96(3), 034302. doi:10.1103/PhysRevC.96.034302
- Ciappina, M. F., Perez-Hernandez, J. A., Landsman, A. S., Okell, W. A., Zhrebtsov, S., Foerg, B., ... Levenstein, M. (2017): Attosecond physics at the nanoscale. *Reports on Progress in Physics*, 80(5), 054401. doi:10.1088/1361-6633/aa574e
- Cologna, G., Chakraborty, N., Jacholkowska, A., Lorentz, M., Mohamed, M., Perennes, C., ... Kurtanidze, O. (2017): The Exceptional Flare of Mrk 501 in 2014 Combined Observations with HESS and FACT. *AIP Conference Proceedings*, 1792, 050019. doi:10.1063/1.4968965
- Consolati, G., Aghion, S., Amsler, C., Bonomi, G., Brusa, R. S., Caccia, M., ... Zurlo, N. (2017): Positronium for Antihydrogen Production in the AEGIS Experiment. *Acta Physica Polonica A*, 132(5), 1443–1449. doi:10.12693/APhysPolA.132.1443
- Cristofari, P., Gabici, S., Humensky, T. B., Santander, M., Terrier, R., Parizot, E., & Casanova, S. (2017): Supernova remnants in the very-high-energy gamma-ray domain: the role of the Cherenkov telescope array. *Monthly Notices of the Royal Astronomical Society*, 471(1), 201–209. doi:10.1093/mnras/stx1574
- Cui, N., & Macovei, M. (2017): Amplifying ultraweak transitions in collective systems via quantum interference. *Physical Review A*, 96(6), 063814. doi:10.1103/PhysRevA.96.063814
- Dai, Z. G., Wang, J., & Yu, Y. W. (2017): Radio Emission from Pulsar Wind Nebulae without Surrounding Supernova Ejecta: Application to FRB 121102. *Astrophysical Journal, Letters*, 838(1), L7. doi:10.3847/2041-8213/aa6745
- De Roubin, A., Atanasov, D., Blaum, K., George, S., Herfurth, F., Kisler, D., ... Zuber, K. (2017): Nuclear deformation in the  $A \approx 100$  region: Comparison between new masses and mean-field predictions. *Physical Review C*, 96(01), 014310. doi:10.1103/PhysRevC.96.014310
- De Wilt, P., Rowell, G., Walsh, A. J., Burton, M., Rathborne, J., Fukui, Y., ... Aharonian, F. (2017): Dense molecular gas at 12 mm towards Galactic TeV gamma-ray sources. *Monthly Notices of the Royal Astronomical Society*, 468(2), 2093–2113. doi:10.1093/mnras/stx369
- Debierre, V., & Harman, Z. (2017): Resonance fluorescence in the resolvent-operator formalism. *Physical Review A*, 96(4), 043835. doi:10.1103/PhysRevA.96.043835
- Del Sorbo, D., Seipt, D., Blackburn, T. G., Thomas, A. G. R., Murphy, C. D., Kirk, J. G., & Ridgers, C. P. (2017): Spin polarization of electrons by ultraintense lasers. *Physical Review A*, 96(4), 043407. doi:10.1103/

Dev, B., Lindner, M., & Ohmer, S. (2017): Gravitational Waves as a New Probe of Bose-Einstein Condensate Dark Matter. *Physics Letters B*, 773, 219–224. doi:10.1016/j.physletb.2017.08.043

Dev, B., Miralles Vila, C., & Rodejohann, W. (2017): Naturalness in testable type II seesaw scenarios. *Nuclear Physics B*, 921, 436–453. doi:10.1016/j.nuclphysb.2017.06.007

Dev, B., Mohapatra, R. N., & Zhang, Y. (2017): Heavy right-handed neutrino dark matter in left-right models. *Modern Physics Letters A*, 32(15), 1740007. doi:10.1142/S0217732317400077

Di Piazza, A., Wistisen, T. N., & Uggerhøj, U. I. (2017): Investigation of classical radiation reaction with aligned crystals. *Physics Letters B*, 765, 1–5. doi:10.1016/j.physletb.2016.10.083

Di Piazza, A. (2017): First-order strong-field QED processes in a tightly focused laser beam. *Physical Review A*, 95(3), 032121. doi:10.1103/PhysRevA.95.032121

Diebold, S., Barcelo, M., Bauer, C., Bernhard, S., Biegger, M., Capasso, M., ... Zietara, K. (2017): Readout electronics testing during mass production of FlashCam cameras for the Cherenkov Telescope Array. *Proceedings of SPIE*, 10399, 103991T. doi:10.1117/12.2270608

Donath, A., Brun, F., Chaves, R. C. G., Deil, C., Marandon, V., & Terrier, R. (2017): The HESS Galactic plane survey. *AIP Conference Proceedings*, 1792, 040001. doi:10.1063/1.4968905

Dournaux, J. L., De Franco, A., Laporte, P., White, R., Greenshaw, T., Sol, H., ... Zink, A. (2017): Operating performance of the gamma-ray Cherenkov telescope: An end-to-end Schwarzschild-Couder telescope prototype for the Cherenkov Telescope Array. *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, 845, 355–358. doi:10.1016/j.nima.2016.05.059

Drischler, C., Krüger, T., Hebeler, K., & Schwenk, A. (2017): Pairing in neutron matter: New uncertainty estimates and three-body forces. *Physical Review C*, 95(2), 024302. doi:10.1103/PhysRevC.95.024302

Foerster, A., Leymann, H. A. M., & Wiersig, J. (2017): Computer-aided cluster expansion: An efficient algebraic approach for open quantum many-particle systems. *Computer Physics Communications*, 212, 210–219. doi:10.1016/j.cpc.2016.10.010

Fornengo, N., Masiero, A., Queiroz, F., & Yaguna, C. E. (2017): On the role of neutrinos telescopes in the search for Dark Matter annihilations in the Sun. *Journal of Cosmology and Astroparticles Physics*, 2017(11), 012. doi:10.1088/1475-7516/2017/12/012

Funk, S., Jankowsky, D., Katagiri, H., Kraus, M., Okumura, A., Schoorlemmer, H., ... Zorn, J. (2017): TARGET: A Digitizing And Trigger ASIC For The Cherenkov Telescope Array. *AIP Conference Proceedings*, 1792, 080012. doi:10.1063/1.4969033

Gallant, A. T., Alanssari, M., Bale, J. C., Andreoiu, C., Barquest, B. R., Chowdhury, U., ... Dilling, J. (2017): Mass determination near  $N=20$  for Al and Na isotopes. *Physical Review C*, 96(2), 024325. doi:10.1103/PhysRevC.96.024325

Gandolfi, S., Hammer, H.-W., Klos, P., Lynn, J. E., & Schwenk, A. (2017): Is a Trineutron Resonance Lower in Energy than a Tetraneutron Resonance? *Physical Review Letters*, 118(23), 232501. doi:10.1103/PhysRevLett.118.232501



- Garny, M., Heisig, J., Luelf, B., & Vogl, S. (2017): Coannihilation without chemical equilibrium. *Physical Review D*, 96(10), 103521. doi:10.1103/PhysRevD.96.103521
- Gastaldo, L., Blaum, K., Chrysalidis, K., Goodacre, T. D., Domula, A., Door, M., ... Zuber, K. (2017): The Electron Capture in  $^{163}\text{Ho}$  Experiment ECHO. *European Physical Journal - Special Topics*, 226(8), 1623–1694. doi:10.1140/epjst/e2017-70071-y
- Ge, S.-F., & Lindner, M. (2017): Extracting Majorana properties from strong bounds on neutrinoless double beta decay. *Physical Review D*, 95(3), 033003. doi:10.1103/PhysRevD.95.033003
- Ge, S.-F., Lindner, M., & Rodejohann, W. (2017): Atmospheric trident production for probing new physics. *Physics Letters B*, 772, 164–168. doi:10.1016/j.physletb.2017.06.020
- Ge, S.-F., Pasquini, P., Tortola, M., & Valle, J. W. F. (2017): Measuring the leptonic CP phase in neutrino oscillations with nonunitary mixing. *Physical Review D*, 95(3), 033005. doi:10.1103/PhysRevD.95.033005
- Ge, S.-F., Rodejohann, W., & Zuber, K. (2017): Half-life expectations for neutrinoless double beta decay in standard and nonstandard scenarios. *Physical Review D*, 96(5), 055019. doi:10.1103/PhysRevD.96.055019
- Ghanbari-Adivi, E., Fischer, D., Ferreira, N., Goullon, J., Hubele, R., LaForge, A., ... Madison, D. (2017): Comparison of experimental and theoretical fully differential cross sections for single ionization of the 2s and 2p states of Li by  $\text{Li}^{2+}$  ions. *Journal of Physics B*, 50(21), 215202. doi:10.1088/1361-6455/aa8dd2
- Giacche, S., & Kirk, J. G. (2017): Electron Acceleration at Pulsar Wind Termination Shocks. *Astrophysical Journal*, 835(2), 235. doi:10.3847/1538-4357/835/2/235
- Giacche, S., & Kirk, J. G. (2017): Electron Acceleration at PWN Termination Shocks: application to PSR B1259-63. *AIP Conference Proceedings*, 1792, 040019. doi:10.1063/1.4968923
- Giacinti, G., & Kirk, J. G. (2017): Large-scale Cosmic-Ray Anisotropy as a Probe of Interstellar Turbulence. *Astrophysical Journal*, 835(2), 258. doi:10.3847/1538-4357/835/2/258
- Giacoppo, F., Blaum, K., Block, M., Chhetri, P., Düllmann, C. E., Droese, C., ... Yakushev, A. (2017): Recent Upgrades of the SHIPTRAP Setup: On the Finish Line Towards Direct Mass Spectroscopy of Super-heavy Elements. *Acta Physica Polonica B*, 43(3), 423–429. doi:10.5506/APhysPolB.48.423
- Giavitto, G., Ashton, T., Balzer, A., Berge, D., Brun, F., Chaminade, T., ... Toussnel, F. (2017): The Upgrade of the HESS Cameras. *AIP Conference Proceedings*, 1792, 070008. doi:10.1063/1.4969005
- Giavitto, G., Ashton, T., Balzer, A., Berge, D., Brun, F., Chaminade, T., ... Toussnel, F. (2017): The upgrade of the HESS cameras. *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, 876, 35–38. doi:10.1016/j.nima.2016.12.057
- Gottschall, D., Capasso, M., Deil, C., Djannati-Atai, A., Donath, A., Eger, P., ... Vink, J. (2017): Discovery of new TeV supernova remnant shells in the Galactic plane with HESS. *AIP Conference Proceedings*, 1792, 040030. doi:10.1063/1.4968934
- Grieser, M., von Hahn, R., Vogel, S., & Wolf, A. (2017): The phase slip factor of the electrostatic cryogenic storage ring CSR. *Journal of Physics: Conference Series*, 874(conf. 1), 012049. doi:10.1088/1742-6596/874/1/012049
- Groenemeijer, P., Pucik, T., Holzer, A. M., Antonescu, B., Riemann-Campe, K., Schultz, D. M., ... Sausen, R. (2017): Severe Convective Storms in Europe: Ten Years of Research and Education at the European Se-

vere Storms Laboratory. *Bulletin of the American Meteorological Society*, 98(12), 2641–2651. doi:10.1175/BAMS-D-16-0067.1

Grootes, M. W., Tuffs, R. J., Popescu, C. C., Norberg, P., Robotham, A. S. G., Liske, J., ... Rushton, M. (2017): Galaxy And Mass Assembly (GAMA): Gas Fueling of Spiral Galaxies in the Local Universe. I. The Effect of the Group Environment on Star Formation in Spiral Galaxies. *Astronomical Journal*, 153(3), 111. doi:10.3847/1538-3881/153/3/111

Haber, J., Kong, X., Strohm, C., Willing, S., Gollwitzer, J., Bocklage, L., ... Roehlsberger, R. (2017): Rabi oscillations of X-ray radiation between two nuclear ensembles. *Nature Photonics*, 11(11), 720–725. doi:10.1038/s41566-017-0013-3

Hansen, R., & Vogl, S. (2017): Thermalizing Sterile Neutrino Dark Matter. *Physical Review Letters*, 119(25), 251305. doi:10.1103/PhysRevLett.119.251305

Harigaya, K., & Schmitz, K. (2017): Unified model of chaotic inflation and dynamical supersymmetry breaking. *Physics Letters B*, 773, 320–324. doi:10.1016/j.physletb.2017.08.050

Hassan, T., Arrabito, L., Bernloehr, K., Bregeon, J., Cortina, J., Cumani, P., ... Wood, M. (2017): Monte Carlo performance studies for the site selection of the Cherenkov Telescope Array. *Astroparticle Physics*, 93, 76–85. doi:10.1016/j.astropartphys.2017.05.001

HAWC Collaboration, Alfaro, R., Alvarez, C., Álvarez, J. D., Arceo, R., Arteaga-Velázquez, J. C., ... Zhou, H. (2017): Search for very-high-energy emission from Gamma-ray Bursts using the first 18 months of data from the HAWC Gamma-ray Observatory. *The Astrophysical Journal*, 843(2), 88. doi:10.3847/1538-4357/aa756f

HAWC collaboration, Abeysekara, A. U., Albert, A., Alfaro, R., Alvarez, C., Álvarez, J. D., ... Zhang, H. (2017): Extended gamma-ray sources around pulsars constrain the origin of the positron flux at Earth. *Science*, 358(6365), 911–914. doi:10.1126/science.aan4880

HAWC Collaboration, Abeysekara, A. U., Albert, A., Alfaro, R., Alvarez, C., Álvarez, J. D., ... Zhang, H. (2017): Extended gamma-ray sources around pulsars constrain the origin of the positron flux at Earth. *Science*, 358(6365), 911–914. doi:10.1126/science.aan4880

HAWC Collaboration, Abeysekara, A. U., Albert, A., Alfaro, R., Alvarez, C., Álvarez, J. D., ... Zhou, H. (2017): Daily monitoring of TeV gamma-ray emission from Mrk 421, Mrk 501, and the Crab Nebula with HAWC. *The Astrophysical Journal*, 841(2), 100. doi:10.3847/1538-4357/aa729e

HAWC Collaboration, Abeysekara, A. U., Albert, A., Alfaro, R., Alvarez, C., Álvarez, J. D., ... Zhou, H. (2017): Observation of the Crab Nebula with the HAWC Gamma-Ray Observatory. *The Astrophysical Journal*, 843(1), 39. doi:10.3847/1538-4357/aa7555

HAWC Collaboration, Abeysekara, A. U., Albert, A., Alfaro, R., Alvarez, C., Álvarez, J. D., ... Zhou, H. (2017): Search for Very High Energy Gamma Rays from the Northern Fermi Bubble Region with HAWC. *The Astrophysical Journal*, 842(2). doi:10.3847/1538-4357/aa751a

HAWC Collaboration, Abeysekara, A. U., Albert, A., Alfaro, R., Alvarez, C., Álvarez, J. D., ... Zhou, H. (2017): The 2HWC HAWC Observatory Gamma Ray Catalog. *The Astrophysical Journal*, 843(3), 40. doi:10.3847/1538-4357/aa7556

HAWC Collaboration, Abeysekara, A. U., Albert, A., Alfaro, R., Alvarez, C., Álvarez, J. D., ... Zhou, H. (2017): The 2HWC HAWC Observatory Gamma Ray Catalog. *Astrophysical Journal*, 843(1), 40.

doi:10.3847/1538-4357/aa7556

HAWC Collaboration, Abeysekara, A. U., Alfaro, R., Alvarez, C., Álvarez, J. D., Arceo, R., ... Zhou, H. (2017): The HAWC real-time flare monitor for rapid detection of transient events. *Astrophysical Journal*, 843(2), 116. doi:10.3847/1538-4357/aa789f

HAWC Collaboration, Alfaro, R., Alvarez, C., Arceo, R., Arteaga-Velázquez, J. C., Rojas, D. A., ... Álvarez, J. D. (2017): All-particle cosmic ray energy spectrum measured by the HAWC experiment from 10 to 500 TeV. *Physical Review D*, 96(12), 122001. doi:10.1103/PhysRevD.96.122001

Hawton, M., & Debierre, V. (2017): Maxwell meets Reeh-Schlieder: The quantum mechanics of neutral bosons. *Physics Letters. A*, 381(23), 1926–1935. doi:10.1016/j.physleta.2017.04.004

Heeg, K. P., & Evers, J. (2017): Scharfe Röntgenpulse durch ruckartige Bewegung. *Physik in Unserer Zeit*, 48(6), 267–268. doi:10.1002/piuz.201770605

Heeg, K. P., Kaldun, A., Strohm, C., Reiser, P., Ott, C., Subramanian, R., ... Evers, J. (2017): Spectral narrowing of x-ray pulses for precision spectroscopy with nuclear resonances. *Science*, 357(6349), 375–378. doi:10.1126/science.aan3512

Heiße, F., Köhler-Langes, F., Rau, S., Hou, J., Junck, S., Kracke, A., ... Sturm, S. (2017): High-Precision Measurement of the Proton's Atomic Mass. *Physical Review Letters*, 119(03), 033001. doi:10.1103/PhysRevLett.119.033001

Helmboldt, A. J., Humbert, P., Lindner, M., & Smirnov, J. (2017): Minimal conformal extensions of the Higgs sector. *Journal of High Energy Physics : JHEP*, 2017(7), 113. doi:10.1007/JHEP07(2017)113

Helmboldt, A., & Lindner, M. (2017): Prospects for three-body Higgs boson decays into extra light scalars. *Physical Review D*, 95(5), 055008. doi:10.1103/PhysRevD.95.055008

Hessler, A. G., Ibarro, A., Molinaro, E., & Vogl, S. (2017): Probing the scotogenic FIMP at the LHC. *Journal of High Energy Physics : JHEP*, 2017(1), 100. doi:10.1007/JHEP01(2017)100

Hoferichter, M., Klos, P., Menendez, J., & Schwenk, A. (2017): Improved Limits for Higgs-Portal Dark Matter from LHC Searches. *Physical Review Letters*, 119(18), 181803. doi:10.1103/PhysRevLett.119.181803

Hofmann, W. (2017): The Cherenkov Telescope Array - Status. *AIP Conference Proceedings*, 1792, 020014. doi:10.1063/1.4968899

Hofmann, W. (2017): Perspectives from CTA in relativistic astrophysics. *International Journal of Modern Physics D*, 26(3), 1730005. doi:10.1142/S0218271817300051

Hoppe, J., Drischler, C., Furnstahl, R. J., Hebel, K., & Schwenk, A. (2017): Weinberg eigenvalues for chiral nucleon-nucleon interactions. *Physical Review C*, 96(5), 054002. doi:10.1103/PhysRevC.96.054002

Horowitz, C. J., Caballero, O. L., Lin, Z., O'Connor, E., & Schwenk, A. (2017): Neutrino-nucleon scattering in supernova matter from the virial expansion. *Physical Review C*, 95(2), 025801. doi:10.1103/PhysRevC.95.025801

Huang, X.-C., Li, W.-B., Kong, X., & Zhu, L.-F. (2017): Field redistribution inside an X-ray cavity-QED setup. *Optics Express*, 25(25), 31337–31346. doi:10.1364/OE.25.031337

- Huth, L., Tews, I., Lynn, J. E., & Schwenk, A. (2017): Analyzing the Fierz rearrangement freedom for local chiral two-nucleon potentials. *Physical Review C*, 96(5), 054003. doi:10.1103/PhysRevC.96.054003
- Iablonskyi, D., Ueda, K., Ishikawa, K. L., Kheifets, A. S., Carpeggiani, P., Reduzzi, M., ... Prince, K. C. (2017): Observation and Control of Laser-Enabled Auger Decay. *Physical Review Letters*, 119(7), 073203. doi:10.1103/PhysRevLett.119.073203
- Ioannisian, A. N., Smirnov, A. Y., & Wyler, D. (2017): Scanning the Earth with solar neutrinos and DUNE. *Physical Review D*, 96(3), 036005. doi:10.1103/PhysRevD.96.036005
- Ioannisian, A. N., & Smirnov, A. (2017): Attenuation effect and neutrino oscillation tomography. *Physical Review D*, 96(8), 083009. doi:10.1103/PhysRevD.96.083009
- Jager, M. F., Ott, C., Kraus, P. M., Kaplan, C. J., Pouse, W., Marvel, R. E., ... Leone, S. R. (2017): Tracking the insulator-to-metal phase transition in VO<sub>2</sub> with few-femtosecond extreme UV transient absorption spectroscopy. *Proceedings of the National Academy of Sciences of the United States of America*, 114(36), 9558–9563. doi:10.1073/pnas.1707602114
- Jardin-Blicq, A., & Joshi, V. (2017): HAWC Upgrade for Multi-TeV gamma-ray Detection. *AIP Conference Proceedings*, 1792, 070010. doi:10.1063/1.4969007
- Jarrett, T. H., Cluver, M. E., Magoulas, C., Bilicki, M., Alpaslan, M., Bland-Hawthorn, J., ... Wang, L. (2017): Galaxy and Mass Assembly (GAMA): Exploring the WISE Web in G12. *Astrophysical Journal*, 836(2), 182. doi:10.3847/1538-4357/836/2/182
- Jeschke, D., Agostini, M., Altenmueller, K., Appel, S., Atroshchenko, V., Bellini, G., ... Zuzel, G. (2017): Recent Results from Borexino. *Journal of Physics: Conference Series*, 798, 012114. doi:10.1088/1742-6596/798/1/012114
- Jimenez, D., Kamada, K., Schmitz, K., & Xu, X.-J. (2017): Baryon symmetry and gravitational waves from pseudoscalar inflation. *Journal of Cosmology and Astroparticles Physics*, 2017(11), 011. doi:10.1088/1475-7516/2017/12/011
- Jin, L., Evers, J., & Macovei, M. (2017): Collective dynamics in a laser-pumped mixture of two atomic ensembles. *Journal of the Optical Society of America B-Optical Physics*, 34(6), 1280–1285. doi:10.1364/JOSAB.34.001280
- Joshi, V. (2017): HAWC High Energy Upgrade with a Sparse Array. *EPJ Web of Conferences*, 136, 03006. doi:10.1051/epjconf/201713603006
- Joyner, C. H., Smilansky, U., & Weidenmüller, H. A. (2017): Spectral statistics of the uni-modular ensemble. *Journal of Physics A*, 50(38), 385101. doi:10.1088/1751-8121/aa836a
- Kavanagh, B. J., Queiroz, F., Rodejohann, W., & Yaguna Toro, C. E. (2017): Prospects for determining the particle/antiparticle nature of WIMP dark matter with direct detection experiments. *Journal of High Energy Physics : JHEP*, 2017(10), 059. doi:10.1007/JHEP10(2017)059
- Kirk, J. G., & Giacinti, G. (2017): Inductive Spikes in the Crab Nebula: A Theory of gamma-Ray Flares. *Physical Review Letters*, 119(21), 211101. doi:10.1103/PhysRevLett.119.211101
- Kirsten, T. (2017): Neutrino Astronomy: Current Status, Future Prospects. *Journal of Astronomical Instrumentation*, 6(4), UNSP 1780004. doi:10.1142/S2251171717800046

- Klaiber, M., Hatsagortsyan, K. Z., Wu, J., Luo, S. S., Grugan, P., & Walker, B. C. (2017): Limits of Strong Field Rescattering in the Relativistic Regime. *Physical Review Letters*, 118(9), 093001. doi:10.1103/PhysRevLett.118.093001
- Klaiber, M., Daněk, J., Yakaboylu, E., Hatsagortsyan, K. Z., & Keitel, C. H. (2017): Strong-field ionization via a high-order Coulomb-corrected strong-field approximation. *Physical Review A*, 95(2), 023403. doi:10.1103/PhysRevA.95.023403
- Klasen, M., Lyonnet, F., & Queiroz, F. (2017): NLO plus NLL collider bounds, Dirac fermion and scalar dark matter in the B-L model. *European Physical Journal C*, 77(5), 348. doi:10.1140/epjc/s10052-017-4904-8
- Klepser, S., Aharonian, F. A., Anguener, E. O., Casanova, S., Hahn, J., Mariaud, C., ... Zefi, F. (2017): New Insights into Pulsar Wind Nebula Evolution with HESSI and II. *AIP Conference Proceedings*, 1792, 040012. doi:10.1063/1.4968916
- Klos, P., Carbone, A., Hebeler, K., Menendez, J., & Schwenk, A. (2017): Uncertainties in constraining low-energy constants from  $3\text{H} \beta$  decay. *European Physical Journal A*, 53(8), 168. doi:10.1140/epja/i2017-12357-7
- Knauer, S., Fischer, P., Marx, G., Schabinger, B., Schweikhard, L., & Wolf, R. (2017): Multi-reflection time-of-flight mass spectrometry with combined in-trap lift capture and mirror-switch ejection. *International Journal of Mass Spectrometry*, 423, 46–53. doi:10.1016/j.ijms.2017.10.007
- Kobyakov, D. N., Pethick, C. J., Reddy, S., & Schwenk, A. (2017): Dispersion and decay of collective modes in neutron star cores. *Physical Review C*, 96(2), 025805. doi:10.1103/PhysRevC.96.025805
- Kong, X., & Pálffy, A. (2017): Collective radiation spectrum for ensembles with Zeeman splitting in single-photon superradiance. *Physical Review A*, 96(3), 033819. doi:10.1103/PhysRevA.96.033819
- Kowalska, M., Aschenbrenner, P., Baranowski, M., Bissell, M. L., Gins, W., Harding, R. D., ... Zakoucky, D. (2017): New laser polarization line at the ISOLDE facility. *Journal of Physics G: Nuclear and Particle Physics*, 44(8), 084005. doi:10.1088/1361-6471/aa77d7
- Krantz, C., Badnell, N. R., Müller, A., Schippers, S., & Wolf, A. (2017): Recombination of open-shell tungsten ions. *Journal of Physics B: Atomic, Molecular and Optical Physics*, 50(5), 052001. doi:10.1088/1361-6455/aa547d
- Krantz, C., Novotny, O., Becker, A., George, S., Grieser, M., von Hahn, R., ... Wolf, A. (2017): Single-particle detection of products from atomic and molecular reactions in a cryogenic ion storage ring. *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, 851, 92–102. doi:10.1016/j.nima.2017.01.050
- Krieger, A., Nörtershäuser, W., Geppert, C., Blaum, K., Bissell, M. L., Frömmgen, N., ... Zakova, M. (2017): Frequency-comb referenced collinear laser spectroscopy of  $\text{Be}^+$  for nuclear structure investigations and many-body QED tests. *Applied Physics B: Lasers and Optics*, 123, 15. doi:10.1007/s00340-016-6579-5
- Kuebel, M., Burger, C., Siemering, R., Kling, N. G., Bergues, B., Alnaser, A. S., ... Kling, M. F. (2017): Phase- and intensity-dependence of ultrafast dynamics in hydrocarbon molecules in few-cycle laser fields. *Molecular Physics*, 115(15-16), 1835–1845. doi:10.1080/00268976.2017.1288935
- Lapington, J. S., Abchiche, A., Allan, D., Amans, J.-P., Armstrong, T. P., Balzer, A., ... Zorn, J. (2017): The GCT camera for the Cherenkov Telescope Array. *Nuclear Instruments and Methods in Physics Research*

Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 876, 1–4. doi:10.1016/j.nima.2016.12.010

Lascar, D., Klawitter, R., Babcock, C., Leistenschneider, E., Stroberg, S. R., Barquest, B. R., ... Dilling, J. (2017): Precision mass measurements of  $^{125-127}\text{Cd}$  isotopes and isomers approaching the  $N = 82$  closed shell. *Physical Review C*, 96(4), 044323. doi:10.1103/PhysRevC.96.044323

Lascar, D., Kootte, B., Barquest, B. R., Chowdhury, U., Gallant, A. T., Good, M., ... Leach, K. G. (2017): A novel transparent charged particle detector for the CPET upgrade at TITAN. *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, 868, 133–138. doi:10.1016/j.nima.2017.07.003

Lau, J. C., Rowell, G., Burton, M. G., Fukui, Y., Aharonian, F. A., Oya, I., ... Casanova, S. (2017): Interstellar gas towards the TeV gamma-ray sources HESS J1640-465 and HESS J1641-463. *Monthly Notices of the Royal Astronomical Society*, 464(3), 3757–3774. doi:10.1093/mnras/stw2692

Leach, K. G., Dillmann, I., Klawitter, R., Leistenschneider, E., Lennarz, A., Brunner, T., ... Dilling, J. (2017): Electroweak Decay Studies of Highly Charged Radioactive Ions with TITAN at TRIUMF. *Atoms*, 5(1), 14. doi:10.3390/atoms5010014

LHCb collaboration, Aaij, H., Adeva, B., Adinolfi, M., Affolder, A., Ajaltouni, Z., Akar, S., ... Zuehelli, S. (2017): Erratum to: Measurement of forward  $J/\psi$  production cross-sections in pp collisions at  $\sqrt{s}=13$  TeV. *Journal of High Energy Physics : JHEP*, 2017(5), 063. doi:10.1007/JHEP05(2017)063

LHCb collaboration, Aaij, R., Adeva, B., Adinolfi, M., Ajaltouni, Z., Akar, S., Albrecht, J., ... Zucchelli, S. (2017): Measurement of the  $B^\pm$  production cross-section in pp collisions at  $\sqrt{s}=7$  and 13 TeV. *Journal of High Energy Physics : JHEP*, 2017(12), 026. doi:10.1007/JHEP12(2017)026

LHCb collaboration, Aaij, R., Adeva, B., Adinolfi, M., Ajaltouni, Z., Akar, S., Albrecht, J., ... Zucchelli, S. (2017): Observation of  $D^0$  Meson Decays to  $\pi^+\pi^-\mu^+\mu^-$  and  $K^+K^-\mu^+\mu^-$  Final States. *Physical Review Letters*, 119(18), 181805. doi:10.1103/PhysRevLett.119.181805

LHCb collaboration, Aaij, R., Adeva, B., Adinolfi, M., Ajaltouni, Z., Akar, S., Albrecht, J., ... Zucchelli, S. (2017): Observation of the Doubly Charmed Baryon  $\Xi_{cc}^{++}$ . *Physical Review Letters*, 119(11), 112001. doi:10.1103/PhysRevLett.119.112001

LHCb collaboration, Aaij, R., Adeva, B., Adinolfi, M., Ajaltouni, Z., Akar, S., Albrecht, J., ... Zucchelli, S. (2017): Search for Baryon-Number Violating  $\Xi_b^0$  Oscillations. *Physical Review Letters*, 119(18), 181807. doi:10.1103/PhysRevLett.119.181807

LHCb collaboration, Aaij, R., Adeva, B., Adinolfi, M., Ajaltouni, Z., Akar, S., Albrecht, J., ... Zucchelli, S. (2017): Measurement of CP observables in  $B^\pm \rightarrow DK^{*\pm}$  decays using two- and four-body D final states. *Journal of High Energy Physics : JHEP*, 2017(11), 156. doi:10.1007/JHEP11(2017)156

LHCb collaboration, Aaij, R., Adeva, B., Adinolfi, M., Ajaltouni, Z., Akar, S., Albrecht, J., ... Zucchelli, S. (2017):  $\chi_{c1}$  and  $\chi_{c2}$  Resonance Parameters with the Decays  $\chi_{c1,c2} \rightarrow J/\psi\mu^+\mu^-$ . *Physical Review Letters*, 119(22), 221801. doi:10.1103/PhysRevLett.119.221801

LHCb collaboration, Aaij, R., Adeva, B., Adinolfi, M., Ajaltouni, Z., Akar, S., Albrecht, J., ... Zucchelli, S. (2017): Study of prompt  $D^0$  meson production in pPb collisions at  $\sqrt{s_{NN}}=5$  TeV. *Journal of High Energy Physics : JHEP*, (10), 090. doi:10.1007/JHEP10(2017)090

LHCb collaboration, Aaij, R., Adeva, B., Adinolfi, M., Ajaltouni, Z., Akar, S., Albrecht, J., ... Zucchelli, S.

(2017): Prompt and nonprompt  $J/\psi$  production and nuclear modification in pPb collisions at  $\sqrt{s_{NN}}=8.16$  TeV. *Physics Letters B*, 774, 159–178. doi:10.1016/j.physletb.2017.09.058

LHCb collaboration, Aaij, R., Adeva, B., Adinolfi, M., Ajaltouni, Z., Akar, S., Albrecht, J., ... Zucchelli, S. (2017): Measurement of the shape of the  $\Lambda_b^0 \rightarrow \Lambda_c^+ \mu^- \nu_\mu$  differential decay rate. *Physical Review D*, 96(11), 112005. doi:10.1103/PhysRevD.96.112005

LHCb collaboration, Aaij, R., Adeva, B., Adinolfi, M., Ajaltouni, Z., Akar, S., Albrecht, J., ... Zucchelli, S. (2017): Measurement of the  $Y(nS)$  polarizations in pp collisions at  $\sqrt{s}=7$  and 8 TeV. *Journal of High Energy Physics : JHEP*, 2017(12), 110. doi:10.1007/JHEP12(2017)110

LHCb collaboration, Aaij, R., Adeva, B., Adinolfi, M., Ajaltouni, Z., Akar, S., Albrecht, J., ... Zucchelli, S. (2017): Study of  $bb$  correlations in high energy proton-proton collisions. *Journal of High Energy Physics : JHEP*, 2017(11), 030. doi:10.1007/JHEP11(2017)030

LHCb collaboration, Aaij, R., Adeva, B., Adinolfi, M., Ajaltouni, Z., Akar, S., Albrecht, J., ... Zucchelli, S. (2017): Resonances and CP violation in  $B_s^0$  and  $B_s^{-0} \rightarrow J/\psi K K^-$  decays in the mass region above the  $\phi(1020)$ . *Journal of High Energy Physics : JHEP*, (8), 037. doi:10.1007/JHEP08(2017)037

LHCb collaboration, Aaij, R., Adeva, B., Adinolfi, M., Ajaltouni, Z., Akar, S., Albrecht, J., ... Zucchelli, S. (2017): Measurement of the phase difference between short- and long-distance amplitudes in the  $B^+ \rightarrow K^+ \mu^+ \mu^-$  decay. *European Physical Journal C*, 77(3), 161. doi:10.1140/epjc/s10052-017-4703-2

LHCb collaboration, Aaij, R., Adeva, B., Adinolfi, M., Ajaltouni, Z., Akar, S., Albrecht, J., ... Zucchelli, S. (2017): Search for the CP-violating strong decays  $\eta \rightarrow \pi^+ \pi^-$  and  $\eta'(958) \rightarrow \pi^+ \pi^-$ . *Physics Letters B*, 764, 233–240. doi:10.1016/j.physletb.2016.11.032

LHCb collaboration, Aaij, R., Adeva, B., Adinolfi, M., Ajaltouni, Z., Akar, S., Albrecht, J., ... Zucchelli, S. (2017): Measurements of charm mixing and CP violation using  $D^0 \rightarrow K^\pm \pi^\pm$  decays. *Physical Review D*, 95(5), 052004. doi:10.1103/PhysRevD.95.052004

LHCb collaboration, Aaij, R., Adeva, B., Adinolfi, M., Ajaltouni, Z., Akar, S., Albrecht, J., ... Zucchelli, S. (2017): Search for the Decays  $B_s^0 \rightarrow \tau^+ \tau^-$  and  $B^0 \rightarrow \tau^+ \tau^-$ . *Physical Review Letters*, 118(25), 251802. doi:10.1103/PhysRevLett.118.251802

LHCb collaboration, LHCb collaboration, Aaij, R., Adeva, B., Adinolfi, M., Ajaltouni, Z., Akar, S., Albrecht, J., ... Zucchelli, S. (2017): Observation of Five New Narrow  $\Omega_c^0$  States Decaying to  $\Xi_c^+ K^-$ . *Physical Review Letters*, 118(18), 182001. doi:10.1103/PhysRevLett.118.182001

LHCb collaboration, Aaij, R., Adeva, B., Adinolfi, M., Ajaltouni, Z., Akar, S., Albrecht, J., ... Zucchelli, S. (2017): Measurement of B-s(0) and D-s(-) Meson Lifetimes. *Physical Review Letters*, 119(10), 101801. doi:10.1103/PhysRevLett.119.101801

LHCb collaboration, Aaij, R., Adeva, B., Adinolfi, M., Ajaltouni, Z., Akar, S., Albrecht, J., ... Zucchelli, S. (2017): First Observation of a Baryonic B-s(0) Decay. *Physical Review Letters*, 119(4), 041802. doi:10.1103/PhysRevLett.119.041802

LHCb collaboration, Aaij, R., Adeva, B., Adinolfi, M., Ajaltouni, Z., Akar, S., Albrecht, J., ... Zucchelli, S. (2017): Improved limit on the branching fraction of the rare decay  $K_s^0 \rightarrow \mu^+ \mu^-$ . *European Physical Journal C*, 77(10), 678. doi:10.1140/epjc/s10052-017-5230-x

LHCb collaboration, Aaij, R., Adeva, B., Adinolfi, M., Ajaltouni, Z., Akar, S., Albrecht, J., ... Zucchelli, S. (2017): Measurement of  $B^0$ ,  $B_s^0$ ,  $B^+$  and  $\Lambda_b^0$  production asymmetries in 7 and 8 TeV proton-proton collisions.

ons. Physics Letters B, 774, 139–158. doi:10.1016/j.physletb.2017.09.023

LHCb collaboration, Aaij, R., Adeva, B., Adinolfi, M., Ajaltouni, Z., Akar, S., Albrecht, J., ... Zucchelli, S. (2017): Erratum to: Measurement of the  $J/\psi$  pair production cross-section in pp collisions at  $\sqrt{s}=13\text{TeV}$ . Journal of High Energy Physics : JHEP, 2017(10), 068. doi:10.1007/JHEP10(2017)068

LHCb collaboration, Aaij, R., Adeva, B., Adinolfi, M., Ajaltouni, Z., Akar, S., Albrecht, J., ... Zucchelli, S. (2017): Search for massive long-lived particles decaying semileptonically in the LHCb detector. European Physical Journal C, 77(4), 224. doi:10.1140/epjc/s10052-017-4744-6

LHCb collaboration, Aaij, R., Adeva, B., Adinolfi, M., Ajaltouni, Z., Akar, S., Albrecht, J., ... Zucchelli, S. (2017): Observation of the suppressed decay  $\Lambda_b^0 \rightarrow p\pi^-\mu^+\mu^-$ . Journal of High Energy Physics : JHEP, 2017(4), 029. doi:10.1007/JHEP04(2017)029

LHCb collaboration, Aaij, R., Adeva, B., Adinolfi, M., Ajaltouni, Z., Akar, S., Albrecht, J., ... Zucchelli, S. (2017): Measurements of prompt charm production cross-sections in pp collisions at  $\sqrt{s}=5\text{TeV}$ . Journal of High Energy Physics : JHEP, 2017(6), 147. doi:10.1007/JHEP06(2017)147

LHCb collaboration, Aaij, R., Adeva, B., Adinolfi, M., Ajaltouni, Z., Akar, S., Albrecht, J., ... Zucchelli, S. (2017): First Experimental Study of Photon Polarization in Radiative  $B_s^0$  Decays. Physical Review Letters, 118(2), 021801. doi:10.1103/PhysRevLett.118.021801

LHCb collaboration, Aaij, R., Adeva, B., Adinolfi, M., Ajaltouni, Z., Akar, S., Albrecht, J., ... Zucchelli, S. (2017): Observation of the decay  $B_s^0 \rightarrow \phi\pi^+\pi^-$  and evidence for  $B^0 \rightarrow \phi\pi^+\pi^-$ . Physical Review D, 95(1), 012006. doi:10.1103/PhysRevD.95.012006

LHCb collaboration, Aaij, R., Adeva, B., Adinolfi, M., Ajaltouni, Z., Akar, S., Albrecht, J., ... Zucchelli, S. (2017): Observation of the Annihilation Decay Mode  $B^0 \rightarrow K^+K^-$ . Physical Review Letters, 118(8), 081801. doi:10.1103/PhysRevLett.118.081801

LHCb collaboration, Aaij, R., Adeva, B., Adinolfi, M., Ajaltouni, Z., Akar, S., Albrecht, J., ... Zucchelli, S. (2017): Observation of  $\eta(c)(2S) \rightarrow p(\bar{p})$  and search for  $X(3872) \rightarrow p(\bar{p})$  decays. Physics Letters B, 769, 305–313. doi:10.1016/j.physletb.2017.03.046

LHCb collaboration, Aaij, R., Adeva, B., Adinolfi, M., Ajaltouni, Z., Akar, S., Albrecht, J., ... Zucchelli, S. (2017): Erratum to: Measurements of the S-wave fraction in  $B^0 \rightarrow K^+\pi^-\mu^+\mu^-$  decays and the  $B^0 \rightarrow K^*(892)^0\mu^+\mu^-$  differential branching fraction. Journal of High Energy Physics : JHEP, (4), 142. doi:10.1007/JHEP04(2017)142

LHCb collaboration, Aaij, R., Adeva, B., Adinolfi, M., Ajaltouni, Z., Akar, S., Albrecht, J., ... Zucchelli, S. (2017): Search for the suppressed decays  $B^+ \rightarrow K^+K^+\pi^-$  and  $B^+ \rightarrow \pi^+\pi^+K^-$ . Physics Letters B, 765, 307–316. doi:10.1016/j.physletb.2016.11.053

LHCb collaboration, Aaij, R., Adeva, B., Adinolfi, M., Ajaltouni, Z., Akar, S., Albrecht, J., ... Zucchelli, S. (2017): Observation of  $J/\psi\phi$  Structures Consistent with Exotic States from Amplitude Analysis of  $B^+ \rightarrow J/\psi\phi K^+$  Decays. Physical Review Letters, 118(2), 022003. doi:10.1103/PhysRevLett.118.022003

LHCb collaboration, Aaij, R., Adeva, B., Adinolfi, M., Ajaltouni, Z., Akar, S., Albrecht, J., ... Zucchelli, S. (2017): Evidence for the two-body charmless baryonic decay  $B^+ \rightarrow p\Lambda^-$ . Journal of High Energy Physics : JHEP, 2017(4), 162. doi:10.1007/JHEP04(2017)162

LHCb collaboration, Aaij, R., Adeva, B., Adinolfi, M., Ajaltouni, Z., Akar, S., Albrecht, J., ... Zucchelli, S.



- (2017): Measurement of CP asymmetries in  $D^{+/-} \rightarrow \eta \pi^{+/-}$  and  $D^0 \rightarrow \eta \pi^{+/-}$  decays. *Physics Letters B*, 771, 21–30. doi:10.1016/j.physletb.2017.05.013
- LHCb collaboration, Aaij, R., Adeva, B., Adinolfi, M., Ajaltouni, Z., Akar, S., Albrecht, J., ... Zucchelli, S. (2017): Measurement of forward  $t\bar{t}$ ,  $W + b\bar{b}$  and  $W + c\bar{c}$  production in pp collisions at  $\sqrt{s}=8$  TeV. *Physics Letters B*, 767, 110–120. doi:10.1016/j.physletb.2017.01.044
- LHCb collaboration, Aaij, R., Adeva, B., Adinolfi, M., Ajaltouni, Z., Akar, S., Albrecht, J., ... Zucchelli, S. (2017): Measurement of CP asymmetry in  $D^0 \rightarrow K^- K^+$  decays. *Physics Letters B*, 767, 177–187. doi:10.1016/j.physletb.2017.01.061
- LHCb collaboration, Aaij, R., Adeva, B., Adinolfi, M., Ajaltouni, Z., Akar, S., Albrecht, J., ... Zucchelli, S. (2017): New algorithms for identifying the flavour of  $B^0$  mesons using pions and protons. *European Physical Journal C*, 77(4), 238. doi:10.1140/epjc/s10052-017-4731-y
- Li, J.-X., Chen, Y.-Y., Hatsagortsyan, K. Z., & Keitel, C. H. (2017): Angle-resolved stochastic photon emission in the quantum radiation-dominated regime. *Scientific Reports*, 7, 11556. doi:10.1038/s41598-017-11871-0
- Li, J.-X., Chen, Y.-Y., Hatsagortsyan, K. Z., & Keitel, C. H. (2018). Single-Shot Carrier-Envelope Phase Determination of Long Superintense Laser Pulses. *Physical Review Letters*, 120(12), 124803. doi:10.1103/PhysRevLett.120.124803
- Li, Y., Kempf, S., Simolka, J., Strack, H., Gruen, E., & Srama, R. (2017): Instrument concept of a single channel dust trajectory detector. *Advances in Space Research*, 59(6), 1636–1641. doi:10.1016/j.asr.2016.12.037
- Liao, W.-T., & Pálffy, A. (2017): Optomechanically induced transparency of x-rays via optical control. *Scientific Reports*, 7(1), 321. doi:10.1038/s41598-017-00428-w
- LIGO Scientific Collaboration, Virgo Collaboration, Fermi GBM, INTEGRAL, IceCube Collaboration, AstroSat Cadmium Zinc Telluride Imager Team, ... Hofmann. (2017): Multi-messenger Observations of a Binary Neutron Star Merger. *The Astrophysical Journal Letters*, 848(2), L12. doi:10.3847/2041-8213/aa91c9
- Lindner, M., & Ohmer, S. (2017): Emerging Internal Symmetries from Effective Spacetimes. *Physics Letters B*, 773, 231–235. doi:10.1016/j.physletb.2017.08.026
- Lindner, M., Radovic, B., & Welter, J. M. (2017): Revisiting large neutrino magnetic moments. *Journal of High Energy Physics : JHEP*, 2017(7), 139. doi:10.1007/JHEP07(2017)139
- Lindner, M., Rodejohann, W., & Xu, X. (2017): Coherent neutrino-nucleus scattering and new neutrino interactions. *Journal of High Energy Physics : JHEP*, 2017(3), 097. doi:10.1007/JHEP03(2017)097
- Liu, R., Rieger, F. M., & Aharonian, F. A. (2017): Particle Acceleration in Mildly Relativistic Shearing Flows: The Interplay of Systematic and Stochastic Effects, and the Origin of the Extended High-energy Emission in AGN Jets. *Astrophysical Journal*, 842(1), 39. doi:10.3847/1538-4357/aa7410
- Liu, R., Taylor, A., Wang, X.-Y., & Aharonian, F. A. (2017): Constraining the Redshift Distribution of Ultrahigh-Energy-Cosmic-Ray Sources by Isotropic Gamma-ray Background. *AIP Conference Proceedings*, 1792, UNSP 060005. doi:10.1063/1.4968988
- Liu, Z., Wang, Q., Ding, J., Cavaletto, S., Pfeifer, T., & Hu, B. (2017): Observation and quantification of the

- quantum dynamics of a strongfield excited multi-level system. *Scientific Reports*, 7, 39993. doi:10.1038/srep39993
- Lu, F., Zhang, C., Grieser, M., Wang, Y., Lü, S., & Zhao, G. (2017): Study of rectangular beam folded waveguide traveling-wave tube for terahertz radiation. *Physics of Plasmas*, 24(10), 103132. doi:10.1063/1.5008287
- Lv, Q. Z., & Bauke, H. (2017): Time- and space-resolved selective multipair creation. *Physical Review D*, 96(5), 056017 . doi:10.1103/PhysRevD.96.056017
- Lynn, J. E., Tews, I., Carlson, J., Gandolfi, S., Gezerlis, A., Schmidt, K. E., & Schwenk, A. (2017): Quantum Monte Carlo calculations of light nuclei with local chiral two- and three-nucleon interactions. *Physical Review C*, 96(5), 054007. doi:10.1103/PhysRevC.96.054007
- Lypova, I., Giavitto, G., Ashton, T., Balzer, A., Berge, D., Brun, F., ... Toussnel, F. (2017): A Major Upgrade of the HESS Cherenkov Cameras. *EPJ Web of Conferences*, 136, 03002. doi:10.1051/epjconf/201713603002
- Magron, C., Alfaut, P., Blank, B., Daudin, L., Eronen, T., Gerbaux, M., ... Xayavong, L. (2017): Precise measurements of half-lives and branching ratios for the beta mirror transitions in the decay of Mg-23 and Si-27. *European Physical Journal A*, 53(4), 77. doi:10.1140/epja/i2017-12271-0
- Manea, V., Ascher, P., Atanasov, D., Barzakh, A. E., Beck, D., Blaum, K., ... Zuber, K. (2017): Penning-trap mass spectrometry and mean-field study of nuclear shape coexistence in the neutron-deficient lead region. *Physical Review C*, 95, 054322. doi:10.1103/PhysRevC.95.054322
- Marandon, V., Brun, F., Lemoine-Goumard, M., Jogler, T., & Katsuta, J. (2017): Observation of the W49B supernova remnant with Fermi-LAT and HESS. *AIP Conference Proceedings*, 1792, 040033. doi:10.1063/1.4968937
- Marcocci, S., Agostini, M., Altenmueller, K., Appel, S., Bellini, G., Benziger, J., ... Zuzel, G. (2017): Real-time detection of solar neutrinos with Borexino. *Nuovo Cimento C*, 40(1), 58. doi:10.1393/ncc/i2017-17058-9
- Masters, A., Sulaiman, A.-H., Stawarz, Ł., Reville, B., Sergis, N., Fujimoto, M., ... Dougherty, M.-K. (2017): An in situ Comparison of Electron Acceleration at Collisionless Shocks under Differing Upstream Magnetic Field Orientations. *Astrophysical Journal*, 843(2), 147. doi:10.3847/1538-4357/aa76ea
- Max, K., Platscher, M., & Smirnov, J. (2017): Gravitational Wave Oscillations in Bigravity. *Physical Review Letters*, 119(11), 111101. doi:10.1103/PhysRevLett.119.111101
- Meyer, C., Becker, A., Blaum, K., Breitenfeldt, C., George, S., Göck, J., ... Wolf, A. (2017): Radiative Rotational Lifetimes and State-Resolved Relative Detachment Cross Sections from Photodetachment Thermometry of Molecular Anions in a Cryogenic Storage Ring. *Physical Review Letters*, 119(02), 023202. doi:10.1103/PhysRevLett.119.023202
- Mi, Y., Camus, N., Fechner, L., Laux, M., Moshhammer, R., & Pfeifer, T. (2017): Electron-Nuclear Coupling through Autoionizing States after Strong-Field Excitation of H<sub>2</sub> Molecules. *Physical Review Letters*, 118(18), 183201. doi:10.1103/PhysRevLett.118.183201
- Michel, N., Oreshkina, N., & Keitel, C. H. (2017): Theoretical prediction of the fine and hyperfine structure of heavy muonic atoms. *Physical Review A*, 96(3), 032510. doi:10.1103/PhysRevA.96.032510
- Mishra, P. M., Blaum, K., George, S., Grieser, M., & Wolf, A. (2017): Transfer matrix calculation for ion op-

tical elements using real fields. *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, 885, 124–133. doi:10.1016/j.nima.2017.11.057

Mitchell, A. M. W., Mariaud, C., Eger, P., Funk, S., Hahn, J., Hinton, J. A., ... Marandon, V. (2017): Detailed VHE Studies of the Pulsar Wind Nebula HESS J1825-137. *AIP Conference Proceedings*, 1792, 040035. doi:10.1063/1.4968939

Mizuno, T., Cörlin, P., Miteva, T., Gokhberg, K., Kuleff, A., Cederbaum, L. S., ... Moshhammer, R. (2017): Time-resolved observation of interatomic excitation-energy transfer in argon dimers. *The Journal of Chemical Physics*, 146(10), 104305. doi:10.1063/1.4978233

Nagahama, H., Smorra, C., Sellner, S., Harrington, J., Higuchi, T., Borchert, M. J., ... Ulmer, S. (2017): Sixfold improved single particle measurement of the magnetic moment of the antiproton. *Nature Communications*, 8, 14084. doi:10.1038/ncomms14084

Natale, G., Popescu, C. C., Tuffs, R. J., Clarke, A. J., Debattista, V. P., Fischera, J., ... Thirlwall, J. J. (2017): Ray-tracing 3D dust radiative transfer with DART-Ray: code upgrade and public release. *Astronomy and Astrophysics*, 607, A125. doi:10.1051/0004-6361/201731757

Nauta, J., Borodin, A., Ledwa, H. B., Stark, J., Schwarz, M., Schmöger, L., ... Pfeifer, T. (2017): Towards precision measurements on highly charged ions using a high harmonic generation frequency comb. *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms*, 408, 285–288. doi:10.1016/j.nimb.2017.04.077

Neugart, R., Billowes, J., Bissell, M. L., Blaum, K., Cheal, B., Flanagan, K. T., ... Yordanov, D. T. (2017): Collinear laser spectroscopy at ISOLDE: new methods and highlights. *Journal of Physics G: Nuclear and Particle Physics*, 44, 064002. doi:10.1088/1361-6471/aa6642

Niederwanger, F., Reimer, O., Kissmann, R., & Tuffs, R. J. (2017): The Use Case of a New ISRF on Diffuse Gamma-ray Emission Models. *AIP Conference Proceedings*, 1792, 070015. doi:10.1063/1.4969012

Okumura, A., Dang, T. V., Ono, S., Tanaka, S., Hayashida, M., Hinton, J., ... Yoshida, T. (2017): Prototyping hexagonal light concentrators using high-reflectance specular films for the Large-Sized Telescopes of the Cherenkov Telescope Array. *Journal of Instrumentation*, 12, P12008. doi:10.1088/1748-0221/12/12/P12008

Oliver, M., White, T., Mabey, P., Kühn-Kauffeldt, M., Döhl, L., Bingham, R., ... Gregori, G. (2017): Magneto-optic probe measurements in low density-supersonic jets. *Journal of Instrumentation*, 12, P12001. doi:10.1088/1748-0221/12/12/P12001

Oreshkina, N., Cavaletto, S., Michel, N., Harman, Z., & Keitel, C. H. (2017): Hyperfine splitting in simple ions for the search of the variation of fundamental constants. *Physical Review A*, 96(3), 030501(R). doi:10.1103/PhysRevA.96.030501

Osmanov, Z., & Rieger, F. M. (2017): On the role of centrifugally accelerated particles in the generation of the Crab pulsar's TeV emission. *AIP Conference Proceedings*, 1792, 040009. doi:10.1063/1.4968913

Parsons, R. D., King, J., Aharonian, F. A., Gabici, S., Holler, M., Kosack, K., ... Viana, A. (2017): The Galactic Centre Viewed with HESS. *AIP Conference Proceedings*, 1792, 040005. doi:10.1063/1.4968909

Parsons, R. D., Schussler, F., Garrigoux, T., Balzer, A., Fuessling, M., Hoischen, C., ... Tam, P. H. T. (2017): The HESS II GRB Observation Scheme. *AIP Conference Proceedings*, 1792, 050034. doi:10.1063/1.4968980

- Patel, H., & Radovic, B. (2017): On the decoupling theorem for vacuum metastability. *Physics Letters B*, 773, 527–533. doi:10.1016/j.physletb.2017.08.075
- Perez, P. F., & Ohmer, S. (2017): Unification and Local Baryon Number. *Physics Letters B*, 768, 86–91. doi:10.1016/j.physletb.2017.02.049
- Petroff, E., Burke-Spolaor, S., Keane, E. F., McLaughlin, M. A., Miller, R., Andreoni, I., ... Zywuca, N. (2017): A polarized fast radio burst at low Galactic latitude. *Monthly Notices of the Royal Astronomical Society*, 469(4), 4465–4482. doi:10.1093/mnras/stx1098
- Pierce, A., Shah, N. R., & Vogl, S. (2018). Stop Co-Annihilation in the Minimal Supersymmetric Standard Model Revisited. *Physical Review D*, 97(2), 023008. Retrieved from <http://hdl.handle.net/21.11116/0000-0000-B46D-B>
- Platscher, M., & Smirnov, J. (2017): Degravitation of the cosmological constant in bigravity. *Journal of Cosmology and Astroparticle Physics*, 2017(3), 051. doi:10.1088/1475-7516/2017/03/051
- Popescu, C. C., Yang, R., Tuffs, R., Natale, G., Rushton, M., & Aharonian, F. (2017): A radiation transfer model for the Milky Way: I. Radiation fields and application to high-energy astrophysics. *Monthly Notices of the Royal Astronomical Society*, 470(3), 2539–2558. doi:10.1093/mnras/stx1282
- Priel, N., Rauch, L., Landsman, H., Manfredini, A., & Budnik, R. (2017): A model independent safeguard against background mismodeling for statistical inference. *Journal of Cosmology and Astroparticle Physics*, 2017(5), 013. doi:10.1088/1475-7516/2017/05/013
- Prosekin, A., Kelner, S. R., & Aharonian, F. A. (2017): On the Synchro-Curvature Radiation. *AIP Conference Proceedings*, 1792, 090001. doi:10.1063/1.4969038
- Puehlhofer, G., Eger, P., Bordas Coma, P., Sasaki, M., Gottschall, D., & Capasso, M. (2017): X-ray observations of Galactic HESS sources: An update. *Astronomische Nachrichten*, 338(2-3), 274–280. doi:10.1002/asna.201713342
- Pullen, M. G., Wolter, B., Wang, X., Tong, X.-M., Sclafani, M., Baudisch, M., ... Biegert, J. (2017): Transition from nonsequential to sequential double ionization in many-electron systems. *Physical Review A*, 96(3), 033401. doi:10.1103/PhysRevA.96.033401
- Ramien, G. N., Gunst, J., Kong, X., & Pálffy, A. (2018). X-ray-frequency modulation via periodic switching of an external magnetic field. *Physical Review A*, 97(6), 063858. doi:10.1103/PhysRevA.97.063858
- Reiter, M. P., Leach, K. G., Drozdowski, O. M., Stroberg, S. R., Holt, J. D., Andreoiu, C., ... Dilling, J. (2017): High-precision QEC-value measurement of the superallowed  $\beta^+$  emitter  $^{22}\text{Mg}$  and an ab initio evaluation of the  $A = 22$  isobaric triplet. *Physical Review C*, 96(5), 052501. doi:10.1103/PhysRevC.96.052501
- Ren, X., Amami, S., Hossen, K., Ali, E., Ning, C., Colgan, J., ... Dorn, A. (2017): Electron-impact ionization of  $\text{H}_2\text{O}$  at low projectile energy: Internormalized triple-differential cross sections in three-dimensional kinematics. *Physical Review A*, 95(2), 022701. doi:10.1103/PhysRevA.95.022701
- Ren, X., Hossen, K., Wang, E., Pindzola, M. S., Dorn, A., & Colgan, J. (2017): Analysis of multiple scattering contributions in electron-impact ionization of molecular hydrogen. *Journal of Physics B: Atomic, Molecular and Optical Physics*, 50, 204002. doi:10.1088/1361-6455/aa8b4a
- Ren, X., Miteva, T., Kolorenč, P., Gokhberg, K., Kuleff, A. I., Cederbaum, L. S., & Dorn, A. (2017): Observation of fast and slow interatomic Coulombic decay in argon dimers induced by electron-impact ionization.

on. *Physical Review A*, 96(3), 032715. doi:10.1103/PhysRevA.96.032715

Rieger, F. M. (2017): Gamma-Rays from Non-Blazar AGN. *AIP Conference Proceedings*, 1792, 020008. doi:10.1063/1.4968893

Rink, T., & Schmitz, K. (2017): Perturbed Yukawa textures in the minimal seesaw model. *Journal of High Energy Physics : JHEP*, 2017(3), 158. doi:10.1007/JHEP03(2017)158

Risoud, F., Leveque, C., Labeye, M., Caillat, J., Maquet, A., Salieres, P., ... Shaaran, T. (2017): Laser-induced blurring of molecular structure information in high harmonic spectroscopy. *Scientific Reports*, 7, 17302. doi:10.1038/s41598-017-17416-9

Rodejohann, W., & Xu, X. (2017): Trimaximal  $\mu$ - $\tau$  reflection symmetry. *Physical Review D*, 96(5), 055039. doi:10.1103/PhysRevD.96.055039

Rodejohann, W., Xu, X., & Yaguna, C. E. (2017): Distinguishing between Dirac and Majorana neutrinos in the presence of general interactions. *Journal of High Energy Physics : JHEP*, 2017(5), 024. doi:10.1007/JHEP05(2017)024

Romoli, C., Taylor, A. M., & Aharonian, F. (2017): Cut-off characterisation of energy spectra of bright fermi sources: Current instrument limits and future possibilities. *Astroparticle Physics*, 88, 38–45. doi:10.1016/j.astropartphys.2016.12.007

Romoli, C., Taylor, A. M., & Aharonian, F. A. (2017): Cut-off Characterisation of Energy Spectra of Bright Fermi Sources: Current Instrument Limits and Future Possibilities. *AIP Conference Proceedings*, 1792, 050013. doi:10.1063/1.4968959

Rudenko, A., Inhester, L., Hanasaki, K., Li, X., Robotjazi, S. J., Erk, B., ... Rolles, D. (2017): Femtosecond response of polyatomic molecules to ultra-intense hard X-rays. *Nature*, 546(7656), 129–+. doi:10.1038/nature22373

Ruiz Garcia, R. F., Gorges, C., Bissell, M., Blaum, K., Gins, W., Heylen, H., ... Yang, X. F. (2017): Development of a sensitive setup for laserspectroscopy studies of very exotic calciumisotopes. *Journal of Physics G: Nuclear and Particle Physics*, 44(4), 044003. doi:10.1088/1361-6471/aa5a24

Salamin, Y. I., & Li, J.-X. (2017): Electromagnetic fields of an ultra-short tightly-focused radially-polarized laser pulse. *Optics Communications*, 405, 265–270. doi:10.1016/j.optcom.2017.08.053

Salesa, F., Lopez Coto, R., & Zhou, H. (2017): HAWC detection of very extended nearby PWNe powered by old pulsars and their relation to the positrons at the Earth. *AIP Conference Proceedings*, 1792, 040014. doi:10.1063/1.4968918

Sanchez, R., Lochmann, M., Joehren, R., Andelkovic, Z., Anielski, D., Botermann, B., ... Noertershaeuser, W. (2017): Laser spectroscopy measurement of the 2s-hyperfine splitting in lithium-like bismuth. *Journal of Physics B*, 50(8), 085004. doi:10.1088/1361-6455/aa63a0

Sano, H., Yamane, Y., Voisin, F., Fujii, K., Yoshiike, S., Inaba, T., ... Fukui, Y. (2017): Discovery of Molecular and Atomic Clouds Associated with the Magellanic Superbubble 30 Doradus C. *Astrophysical Journal*, 843(1), 61. doi:10.3847/1538-4357/aa73e0

Schmelling, M. (2017): Highlights from the LHCb ion physics program. *Journal of Physics: Conference Series*, 779(conf1), 012005. doi:10.1088/1742-6596/779/1/012005

- Schneider, G., Mooser, A., Bohman, M., Schön, N., Harrington, J., Higuchi, T., ... Ulmer, S. (2017): Double-trap measurement of the proton magnetic moment at 0.3 parts per billion precision. *Science*, 358(6366), 1081–1084. doi:10.1126/science.aan0207
- Schuessler, F., Backes, M., Balzer, A., Bruno, F., Fuessling, M., Hoischen, C., ... Reimers, A. (2017): The HESS Multi-Messenger Program: Searches For TeV Gamma-Ray Emission Associated With High-Energy. *AIP Conference Proceedings*, 1792, 060006.
- Sellner, S., Besirli, M., Bohman, M., Borchert, M. J., Harrington, J., Higuchi, T., ... Ulmer, S. (2017): Improved limit on the directly measured antiproton lifetime. *New Journal of Physics*, 19(August 2017), 083023. doi:10.1088/1367-2630/aa7e73
- Shcherbinin, M., LaForge, A. C., Sharma, V., Devetta, M., Richter, R., Moshhammer, R., ... Mudrich, M. (2017): Interatomic Coulombic decay in helium nanodroplets. *Physical Review A*, 96(1), 013407. doi:10.1103/PhysRevA.96.013407
- Simonis, J., Stroberg, S. R., Hebeler, K., Holt, J. D., & Schwenk, A. (2017): Saturation with chiral interactions and consequences for finite nuclei. *Physical Review C*, 96(1), 014303. doi:10.1103/PhysRevC.96.014303
- Skoromnik, O., Baryshevsky, V. G., Ulyanekov, A. P., & Feranchuk, I. D. (2017): Radical increase of the parametric X-ray intensity under condition of extremely asymmetric diffraction. *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms*, 412, 86–92. doi:10.1016/j.nimb.2017.09.013
- Skoromnik, O., & Feranchuk, I. D. (2017): Analytic approximation for eigenvalues of a class of PT symmetric Hamiltonians. *Physical Review A*, 96(5), 052102. doi:10.1103/PhysRevA.96.052102
- Skoromnik, O., Feranchuk, I. D., Leonau, A. U., & Keitel, C. H. (2017): Analytic model of a multi-electron atom. *Journal of Physics B: Atomic, Molecular and Optical Physics*, 50, 245007. doi:10.1088/1361-6455/aa92e6
- Smirnov, O. Y., Agostini, M., Appel, S., Bellini, G., Benziger, J., Bick, D., ... Zuzel, G. (2017): Borexino: Recent results and future plans. *Physics of Particles and Nuclei*, 48(6), 1026–1029. doi:10.1134/S1063779617060533
- Smorra, C., Sellner, S., Borchert, M. J., Harrington, J., Higuchi, T., Nagahama, H., ... Ulmer, S. (2017): A parts-per-billion measurement of the antiproton magnetic moment. *Nature*, 550(7676), 371–374. doi:10.1038/nature24048
- Smorra, C., Mooser, A., Besirli, M., Bohman, M., Borchert, M., Harrington, J., ... Ulmer, S. (2017): Observation of individual spin quantum transitions of a single antiproton. *Physics Letters B*, 769, 1–6. doi:10.1016/j.physletb.2017.03.024
- Stroberg, S. R., Calci, A., Hergert, H., Holt, J. D., Bogner, S. K., Roth, R., & Schwenk, A. (2017): Nucleus-Dependent Valence-Space Approach to Nuclear Structure. *Physical Review Letters*, 118(3), 032502. doi:10.1103/PhysRevLett.118.032502
- Sturm, S., Vogel, M., Köhler, F., Quint, W., Blaum, K., & Werth, G. (2017): High-Precision Measurements of the Bound Electron's Magnetic Moment. *Atoms*, 5(4), 1–14. doi:10.3390/atoms5010004
- Sun, X., Yang, R., McKinley, B., & Aharonian, F. A. (2017): Giant Lobes of Centaurus A as Seen in Radio and Gamma-Ray Images Obtained with the Fermi-LAT and Planck Satellites. *AIP Conference Proceedings*

dings, 1792, 050030. doi:10.1063/1.4968976

Tamburini, M., Di Piazza, A., & Keitel, C. H. (2017): Laser-pulse-shape control of seeded QED cascades. *Scientific Reports*, 7, 5694 . doi:10.1038/s41598-017-05891-z

Tang, Q.-W., Peng, F.-K., Liu, R., Tam, P.-H. T., & Wang, X.-Y. (2017): Evidence of a Spectral Break in the Gamma-Ray Emission of the Disk Component of the Large Magellanic Cloud: A Hadronic Origin? *Astrophysical Journal*, 843(1), 42. doi:10.3847/1538-4357/aa7464

Tang, Q.-W., Wang, X.-Y., & Liu, R. (2017): Evidence of an Internal Dissipation Origin for the High-energy Prompt Emission of GRB 170214A. *Astrophysical Journal*, 844(1), 56. doi:10.3847/1538-4357/aa7a58

Tang, S., Kumar, N., & Keitel, C. H. (2017): Plasma high-order-harmonic generation from ultraintense laser pulses. *Physical Review E*, 95(5), 051201(R). doi:10.1103/PhysRevE.95.051201

Taylor, A. M., & Giacinti, G. (2017): Cosmic rays in a galactic breeze. *Physical Review D*, 95(2), 023001. doi:10.1103/PhysRevD.95.023001

Tibaldo, L., Abchiche, A., Allan, D., Amans, J.-P., Armstrong, T. P., Balzer, A., ... Zorn, J. (2017): The Gamma-ray Cherenkov Telescope for the Cherenkov Telescope Array. *AIP Conference Proceedings*, 1792, 080004. doi:10.1063/1.4969025

Torretti, F., Windberger, A., Ryabtsev, A., Dobrodey, S., Bekker, H., Ubachs, W., ... Versolato, O. O. (2017): Optical spectroscopy of complex open-4d-shell ions Sn<sup>7+</sup>–Sn<sup>10+</sup>. *Physical Review A*, 95(4), 042503. doi:10.1103/PhysRevA.95.042503

Traebert, E., Beiersdorfer, P., & Crespo López-Urrutia, J. R. (2017): Atomic lifetime measurements of Ne-like Fe ions in a magnetic field. *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms*, 408, 107–109. doi:10.1016/j.nimb.2017.04.040

Tsuji, N., Uchiyama, Y., Katsuda, S., Berge, D., & Aharonian, F. A. (2017): Chandra and NuSTAR Observations of Supernova Remnant RX J1713.7-3946. *AIP Conference Proceedings*, 1792, 040003. doi:10.1063/1.4968907

Tu, X. L., Kelic-Heil, A., Litvinov, Y. A., Podolyák, Z., Zhang, Y. H., Huang, W. J., ... Zhou, X. H. (2017): Application of isochronous mass spectrometry for the study of angular momentum population in projectile fragmentation reactions. *Physical Review C*, 95(1), 014610. doi:10.1103/PhysRevC.95.014610

Tubman, E.-R., Scott, R.-H.-H., Doyle, H.-W., Meinecke, J., Ahmed, H., Alraddadi, R.-A.-B., ... Woolsey, N.-C. (2017): Time evolution and asymmetry of a laser produced blast wave. *Physics of Plasmas*, 24(10), 103124. doi:10.1063/1.4987038

Tzeferacos, P., Rigby, A., Bott, A., Bell, A.-R., Bingham, R., Casner, A., ... Lamb, D.-Q. (2017): Numerical modeling of laser-driven experiments aiming to demonstrate magnetic field amplification via turbulent dynamo. *Physics of Plasmas*, 24(4), 041404. doi:10.1063/1.4978628

Uhrich, P., Castrignano, S., Uys, H., & Kastner, M. (2017): Noninvasive measurement of dynamic correlation functions. *Physical Review A*, 96(2), 022127. doi:10.1103/PhysRevA.96.022127

Vandebrouck, M., Lepailleur, A., Sorlin, O., Aumann, T., Caesar, C., Holl, M., ... Zuber, K. (2017): Effective proton-neutron interaction near the drip line from unbound states in <sup>25,26</sup>F. *Physical Review C*, 96(5), 054305. doi:10.1103/PhysRevC.96.054305

- Voisin, F., Rowell, G., Burton, M. G., Fukui, Y., Sano, H., & Aharonian, F. A. (2017): ISM Studies Towards Several PWNe. *AIP Conference Proceedings*, 1792, 040011. doi:10.1063/1.4968915
- Von der Wense, L., Seiferle, B., Stellmer, S., Weitenberg, J., Kazakov, G., Pálffy, A., & Thirolf, P. G. (2017): A laser excitation scheme for  $^{229}\text{mTh}$ . *Physical Review Letters*, 119(13), 132503. doi:10.1103/PhysRevLett.119.132503
- Wang, J., & Dai, Z.-G. (2017): Evolution of newborn rapidly rotating magnetars: Effects of R-mode and fall-back accretion. *Astrophysics & Astronomy*, 603, A9. doi:10.1051/0004-6361/201629610
- Wang, K., Liu, R.-Y., Li, Z., & Dai, Z.-G. (2017): Neutrino production in electromagnetic cascades: An extra component of cosmogenic neutrino at ultrahigh energies. *Physical Review D*, 95(6), 063010. doi:10.1103/PhysRevD.95.063010
- Wang, K., Liu, R., Li, Z., Dai, Z.-G., & Aharonian, F. A. (2017): The Effective Penetration Distance of Ultrahigh Energy Photons in the Cosmic Background Radiation and the Corresponding Neutrinos Production. *AIP Conference Proceedings*, 1792, 060004.
- Warwick, J., Dzelzainis, T., Dieckmann, M.-E., Schumaker, W., Doria, D., Romagnani, L., ... Sarri, G. (2017): Experimental Observation of a Current-Driven Instability in a Neutral Electron-Positron Beam. *Physical Review Letters*, 119(18), 185002. doi:10.1103/PhysRevLett.119.185002
- Watson, J. J., De Franco, A., Abchiche, A., Allan, D., Amans, J.-P., Armstrong, T. P., ... Zorn, J. (2017): Inauguration and First Light of the GCT-M Prototype for the Cherenkov Telescope Array. *AIP Conference Proceedings*, 1792, 080006. doi:10.1063/1.4969027
- Weidenmüller, H. A. (2017): Limitations of the Porter-Thomas Distribution. *AIP Conference Proceedings*, 1912, 020021. doi:10.1063/1.5016146
- Welker, A., Althubiti, N. A. S., Atanasov, D., Blaum, K., Cocolios, T. E., Herfurth, F., ... Zuber, K. (2017): The binding energy of  $^{79}\text{Cu}$ : probing the structure of the doubly magic  $^{78}\text{Ni}$  from only one proton away. *Physical Review Letters*, 119(19), 192502. doi:10.1103/PhysRevLett.119.192502
- Welker, A., Filianin, P., Althubiti, N. A. S., Atanasov, D., Blaum, K., Cocolios, T. E., ... Zuber, K. (2017): Precision electron-capture energy in  $^{202}\text{Pb}$  and its relevance for neutrino-mass determination. *European Physical Journal A*, 53(7), 153. doi:10.1140/epja/i2017-12345-y
- Wen, M., Keitel, C. H., & Bauke, H. (2017): Spin-one-half particles in strong electromagnetic fields: Spin effects and radiation reaction. *Physical Review A*, 95(4), 042102. doi:10.1103/PhysRevA.95.042102
- Werner, F., Bauer, C., Bernhard, S., Capasso, M., Diebold, S., Eisenkolb, F., ... Zietara, K. (2017): Performance verification of the FlashCam prototype camera for the Cherenkov Telescope Array. *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, 876, 31–34. doi:10.1016/j.nima.2016.12.056
- White, R. (2017): CHEC: a Compact High Energy Camera for the Cherenkov Telescope Array. *Journal of Instrumentation*, 12, C12059. doi:10.1088/1748-0221/12/12/C12059
- Wienholtz, F., Kreim, S. W., Rosenbusch, M., Schweikhard, L., & Wolf, R. (2017): Mass-selective ion ejection from multi-reflection time-of-flight devices via a pulsed in-trap lift. *International Journal of Mass Spectrometry*, 421, 285–293. doi:10.1016/j.ijms.2017.07.016
- Wilhelmi, E. de O., Vink, J., Bykov, A., Zanin, R., Bucciantini, N., Amato, E., ... Uvarov, Y. (2017): Unvei-



- ling the Magnetic Structure of VHE SNRs/PWNe with XIPE, the X-ray Imaging-Polarimetry Explorer. AIP Conference Proceedings, 1792, 070023. doi:10.1063/1.4969020
- Wojcik, M., Zuzel, G., & Simgen, H. (2017): Review of high-sensitivity Radon studies. International Journal of Modern Physics A, 32(30), 1743004. doi:10.1142/S0217751X17430047
- Wraith, C., Yang, X. F., Xie, L., Babcock, C., Bierón, J., Billowes, J., ... Yordanov, D. T. (2017): Evolution of nuclear structure in neutron-rich odd-Zn isotopes and isomers. Physics Letters B, 771, 385–391. doi:10.1016/j.physletb.2017.05.085
- Wu, Y., Gunst, J., Keitel, C. H., & Pálffy, A. (2018). Tailoring Laser-Generated Plasmas for Efficient Nuclear Excitation by Electron Capture. Physical Review Letters, 120(5), 052504. doi:10.1103/PhysRevLett.120.052504
- Wu, Y., & Pálffy, A. (2017): Determination of Plasma Screening Effects for Thermonuclear Reactions in Laser-generated Plasmas. The Astrophysical Journal, 838(1), 55. doi:10.3847/1538-4357/aa6252
- Xu, X. (2017): Tree-level vacuum stability of two-Higgs-doublet models and new constraints on the scalar potential. Physical Review D, 95(11), 115019. doi:10.1103/PhysRevD.95.115019
- Yaguna Toro, C. E. (2017): Isospin-violating dark matter in the light of recent data. Physical Review D, 95(5), 055015. doi:10.1103/PhysRevD.95.055015
- Yang, R., & Aharonian, F. A. (2017): Diffuse gamma-ray emission near the young massive cluster NGC 3603. Astrophysics & Astronomy, 600, A107. doi:10.1051/0004-6361/201630213
- Yerokhin, V. A., & Harman, Z. (2017): One-loop electron self-energy for the bound-electron g factor. Physical Review A, 95(6), 060501(R). doi:10.1103/PhysRevA.95.060501
- Yerokhin, V. A., Pachucki, K., Puchalski, M., Harman, Z., & Keitel, C. H. (2017): Electron-correlation effects in the g factor of light Li-like ions. Physical Review A, 95(6), 062511. doi:10.1103/PhysRevA.95.062511
- Yordanov, D., Bissell, M. L., Blaum, K., Rydt, M. D., Geppert, C., Krämer, J., ... Vingerhoets, P. (2017): Spin and Magnetic Moment of  $^{23}\text{Mg}$ . Journal of Physics G: Nuclear and Particle Physics, 44, 075104. doi:10.1088/1361-6471/aa718b
- Zacharias, M., Bottcher, M., Chakraborty, N., Cologna, G., Jankowsky, F., Lenain, J.-P., ... Zaborov, D. (2017): The Complex VHE And Multiwavelength Flaring Activity Of The FSRQ PKS 1510-089 In May 2015. AIP Conference Proceedings, 1792, 050023. doi:10.1063/1.4968969
- Zanin, R. (2017): The Crab pulsar at VHE. EPJ Web of Conferences, 136, 03003. doi:10.1051/epj-conf/201713603003
- Zanin, R., Fernandez-Barral, A., de Ona Wilhelmi, E., Aharonian, F. A., Blanche, O., Galindo, D., & Bosch-Ramon, V. (2017): Detection of high-energy gamma rays from Cygnus X-1 associated with the jets. AIP Conference Proceedings, 1792, 040021. doi:10.1063/1.4968925
- Zatorski, J., Sikora, B., Karshenboim, S. G., Sturm, S., Köhler-Langes, F., Blaum, K., ... Harman, Z. (2017): Extraction of the electron mass from g-factor measurements on light hydrogenlike ions. Physical Review A, 96(1), 012502. doi:10.1103/PhysRevA.96.012502
- Zatorski, J., Sikora, B., Karshenboim, S. G., Sturm, S., Köhler, F., Blaum, K., ... Harman, Z. (2017): Ext-

raction of the electron mass from g-factor measurements on light hydrogenlike ions. *Physical Review A*, 96(1), 012502. doi:10.1103/PhysRevA.96.012502

Zeng, Q., Wang, M., Zhou, X. H., Zhang, Y. H., Tu, X. L., Chen, X. C., ... Zhou, X. (2017): Half-life measurement of short-lived  $^{94m}_{44}\text{Ru}^{44+}$  using isochronous mass spectrometry. *Physical Review C*, 96(3), 031303(R). doi:10.1103/PhysRevC.96.031303

Zhang, P., Xu, X., Shuai, P., Chen, R.J., Yan, X.L., Zhang, Y.H., ... Xu, F.R. (2017): High-precision QEC values of superallowed  $0^+ \rightarrow 0^+\beta$ -emitters  $^{46}\text{Cr}$ ,  $^{50}\text{Fe}$  and  $^{54}\text{Ni}$ . *Physics Letters B*, 767, 20–24. doi:10.1016/j.physletb.2017.01.039

Zhong, Y., Ostach, D., Scholz, M., Epp, S., Techert, S., Schlichting, I., ... Krasniqi, F. S. (2017): Hot carrier relaxation in CdTe via phonon-plasmon modes. *Journal of Physics: Condensed Matter*, 29(9), 095701. doi:10.1088/1361-648X/aa5478

## Conference Papers 2017

Agostini, M., Allardt, M., Bakalyarov, A. M., Balata, M., Barabanov, I., Baudis, L., ... Zuzel, G. (2017): Active background suppression with the liquid argon scintillation veto of GERDA Phase II. In *Journal of Physics: Conference Series* (Vol. 888). Bristol: IOP Publishing. doi:10.1088/1742-6596/888/1/012238

Agostini, M., Allardt, M., Bakalyarov, A. M., Balata, M., Barabanov, I., Baudis, L., ... Zuzel, G. (2017): Study of the GERDA Phase II background spectrum. In *Journal of Physics: Conference Series* (Vol. 888). Bristol: IOP Publishing. doi:10.1088/1742-6596/888/1/012106

Agostini, M., Allardt, M., Bakalyarov, A. M., Balata, M., Barabanov, I., Baudis, L., ... Zuzel, G. (2017): First results from GERDA Phase II. In *Journal of Physics: Conference Series* (Vol. 888). Bristol: IOP Publishing. doi:10.1088/1742-6596/888/1/012030

Giacinti, G. (2017): High-Energy Cosmic-Rays and Neutrinos around Supernova Shock Breakout. In *Proceedings of Science* (Vol. ICRC2017).

Giacinti, G., & Kirk, J. G. (2017): TeV-PeV Cosmic-Ray Anisotropy as a Probe of the Local Interstellar Turbulence. In *Proceedings of Science* (Vol. ICRC2017).

Giacinti, G., & Taylor, A. M. (2017): A Hadronic Model of the Fermi Bubbles: Cosmic-Rays in a Galactic-Breeze. In *Proceedings of Science* (Vol. ICRC2017).

Kirk, J. G., & Giacinti, G. (2017): Inductive spikes and gamma-ray flares from the Crab Nebula. In *Proceedings of Science* (Vol. 312). Garmisch-Partenkirchen, Germany. doi:10.22323/1.312.0010

Liang, G. Y., Crespo López-Urrutia, J. R., Beilmann, C., Wei, H. G., & Zhao, G. (2017): Higher-order contribution in the resonance recombination of electron-ion interaction. In *Journal of Physics: Conference Series* (Vol. 875). Bristol: IOP Publishing. doi:10.1088/1742-6596/875/6/052049

Minkov, N., & Pálffy, A. (2017): Model Mechanism for Radiative Decay of the 7.8 eV Isomer in  $^{229}\text{Th}$ . In *Nuclear Theory* (Vol. 36, pp. 205–214). Rila Mountains, Bulgaria.

Mooser, A., Higuchi, T., Smorra, C., Nagahama, H., Leefer, N., Schneider, G., ... Ulmer, S. (2017): A Test of Charge-Parity-Time Invariance at the Atto-Electronvolt Scale. In *JPS conference proceedings* (Vol. 18). Tokyo: The Physical Society of Japan. doi:10.7566/JPSCP.18.011019

Niederwanger, F., Reimer, O., Kissmann, R., Popescu, C. C., & Tuffs, R. J. (2017). Consequences of using a new ISRF model for modeling Galactic diffuse gamma-ray emission. In *Proceedings of Science* (Vol. ICRC2017).

Schneider, G., Leefer, N., Mooser, A., Blaum, K., Higuchi, T., Matsuda, Y., ... Ulmer, S. (2017): Towards an Improved Measurement of the Proton Magnetic Moment. In *JPS conference proceedings* (Vol. 18). Tokyo: The Physical Society of Japan. doi:10.7566/JPSCP.18.011018

Schüssler, R., Door, M., Rischka, A., Bekker, H., Crespo López-Urrutia, J. R., Filianin, P., ... Blaum, K. (2017): Recent Developments at the High-Precision Mass Spectrometer PENTATRAP. In *JPS conference proceedings* (Vol. 18). Tokyo: The Physical Society of Japan. doi:10.7566/JPSCP.18.011020

Shah, C., Amaro, P., Steinbrügge, R. F., Bernitt, S., Fritzsche, S., Surzhyko, A., ... Tashenov, S. (2017): Strong higher-order resonant contribution to Fe K $\alpha$  x-ray line polarization in hot anisotropic plasmas. In *Journal of Physics: Conference Series* (Vol. 875). Bristol: IOP Publishing. doi:10.1088/1742-6596/875/6/052038

Shah, C., Dobrodey, S., Bernitt, S., Steinbrügge, R. F., Gu, L., Kaastra, J., & Crespo López-Urrutia, J. R. (2017): Laboratory measurements compellingly supports a charge-exchange mechanism for the “Dark matter” ~ 3.5 keV X-ray line. In *Journal of Physics: Conference Series* (Vol. 875). Bristol: IOP Publishing. doi:doi :10.1088/1742-6596/875/6/052039

## Books and Book Chapters 2017

Borge, M. J. G., & Blaum, K. (Eds.). (2017): Focus on Exotic Beams at ISOLDE: A Laboratory Portrait. *Journal of Physics G: Nuclear and Particle Physics* (Vol. 45). London: IOP Publishing. Retrieved from <http://iopscience.iop.org/article/10.1088/1361-6471/aa990f>

Köhler-Langes, F. (2017). The Electron Mass and Calcium Isotope Shifts High-Precision Measurements of Bound-Electron g-Factors of Highly Charged Ions Introduction. Cham: Springer. doi:10.1007/978-3-319-50877-1\_1

Lopez Coto, R. (2017). Very-high-energy Gamma-ray Observations of Pulsar Wind Nebulae and Cataclysmic Variable Stars with MAGIC and Development of Trigger Systems for IACTs Preface. Cham: Springer.

# Publications 2018

## Journals Articles

- Abdalla, H., Abramowski, A., Aharonian, F., Ait Benkhali, F., Akhperjanian, A. G., Andersson, T., ... Zywucka, N. (2018). Deeper HESS observations of Vela Junior (RX J0852.0-4622): Morphology studies and resolved spectroscopy. *Astronomy and Astrophysics*, 612, A7. doi:10.1051/0004-6361/201630002
- Abdalla, H., Abramowski, A., Aharonian, F., Ait Benkhali, F., Akhperjanian, A. G., Andersson, T., ... Katsuta, J. (2018). The supernova remnant W49B as seen with HESS and Fermi-LAT. *ASTRONOMY & ASTROPHYSICS*, 612, A5. doi:10.1051/0004-6361/201527843
- Abdalla, H., Abramowski, A., Aharonian, F., Ait Benkhali, F., Akhperjanian, A. G., Andersson, T., ... Zywucka, N. (2018). HESS discovery of very high energy gamma-ray emission from PKS 0625-354. *Monthly Notices of the Royal Astronomical Society*, 476(3), 4187–4198. doi:10.1093/mnras/sty439
- Abdalla, H., Abramowski, A., Aharonian, F., Ait Benkhali, F., Anguener, E. O., Arakawa, M., ... Zywucka, N. (2018). The HESS Galactic plane survey. *Astronomy and Astrophysics*, 612, A1. doi:10.1051/0004-6361/201732098
- Abdalla, H., Abramowski, A., Aharonian, F., Ait Benkhali, F., Anguner, E. O., Arakawa, M., ... Tanaka, Y. (2018). The gamma-ray spectrum of the core of Centaurus A as observed with HESS and Fermi-LAT. *Astronomy and Astrophysics*, 619, A71. doi:10.1051/0004-6361/201832640
- Abdalla, H., Aharonian, F., Ait Benkhali, F., Anguner, E. O., Arakawa, M., Arcaro, C., ... Shannon, R. M. (2018). First ground-based measurement of sub-20 GeV to 100 GeV gamma-Rays from the Vela pulsar with HESS II. *Astronomy and Astrophysics*, 620, A66. doi:10.1051/0004-6361/201732153
- Abdalla, H., Aharonian, F., Ait Benkhali, F., Anguner, E. O., Arakawa, M., Arcaro, C., ... Taoso, M. (2018). Searches for gamma-ray lines and “pure WIMP” spectra from Dark Matter annihilations in dwarf galaxies with HESS. *Journal of Cosmology and Astroparticle Physics*, 2018(11), 037. doi:10.1088/1475-7516/2018/11/037
- Abdalla, H., Aharonian, F., Benkhali, F. A., Anguner, E. O., Arakawa, M., Arcaro, C., ... Zywucka, N. (2018). The starburst galaxy NGC 253 revisited by HESS and Fermi-LAT. *Astrophysics & Astronomy*, 617, A73. doi:10.1051/0004-6361/201833202
- Abdallah, H., Abramowski, A., Aharonian, F., Ait Benkhali, F., Anguner, E. O., Arakawa, M., ... Zywucka, N. (2018). Search for gamma-Ray Line Signals from Dark Matter Annihilations in the Inner Galactic Halo from 10 Years of Observations with HESS. *Physical Review Letters*, 120(20), 201101. doi:10.1103/PhysRevLett.120.201101
- Abeysekara, A. U., Albert, A., Alfaro, R., Alvarez, C., Alvarez, J. D., Arceo, R., ... Zhou, H. (2018). Constraining the p/p ratio in TeV cosmic rays with observations of the Moon shadow by HAWC. *Physical Review D*, 97(10), 102005. doi:10.1103/PhysRevD.97.102005
- Abeysekara, A. U., Archer, A., Benbow, W., Bird, R., Brose, R., Buchovecky, M., ... Zhou, H. (2018). VERITAS and Fermi-LAT Observations of TeV Gamma-Ray Sources Discovered by HAWC in the 2HWC Catalog. *Astrophysical Journal*, 866(1), 24. doi:10.3847/1538-4357/aade4e
- Abrahamo, T., Almazan, H., dos Anjos, J. C., Appel, S., Bekman, I., Bezerra, T. J. C., ... Yermia, F. (2018). Novel event classification based on spectral analysis of scintillation waveforms in Double Chooz. *Journal*

Ackermann, D., Mistry, A. K., Hessberger, F. P., Andel, B., Antalic, S., Block, M., ... Zhang, Z. (2018). COMPASS-A COMPACT decay spectroscopy set-up. *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, 907, 81–89. doi:10.1016/j.nima.2018.01.096

Ackermann, M., Ajello, M., Albert, A., Atwood, W. B., Baldini, L., Ballet, J., ... Rephaeli, Y. (2018). Search for Gamma-Ray Emission from the Coma Cluster with Six Years of Fermi-LAT Data (vol 819, 149, 2016). *Astrophysical Journal*, 860(1), 85. doi:10.3847/1538-4357/aac7c3

Adami, C., Giles, P., Koulouridis, E., Pacaud, F., Caretta, C. A., Pierre, M., ... Willis, J. (2018). The XXL Survey XX. The 365 cluster catalogue. *Astronomy and Astrophysics; EDP Sciences, Les Ulis Cedex A France*, 620, A5. doi:10.1051/0004-6361/201731606

Aghion, S., Amsler, C., Antonello, M., Belov, A., Bonomi, G., Brusa, R. S., ... Zurlo, N. (2018). Producing long-lived  $2(3)S$  positronium via  $3(3)P$  laser excitation in magnetic and electric fields. *Physical Review A*, 98(1), 013402. doi:10.1103/PhysRevA.98.013402

Aghion, S., Amsler, C., Antonello, M., Belov, A., Bonomi, G., Brusa, R. S., ... Zurlo, N. (2018). Antiproton tagging and vertex fitting in a Timepix3 detector. *Journal of Instrumentation*, 13, P06004. doi:10.1088/1748-0221/13/06/P06004

Aghion, S., Amsler, C., Bonomi, G., Brusa, R. S., Caccia, M., Caravita, R., ... Antonello, M. (2018). Compression of a mixed antiproton and electron non-neutral plasma to high densities. *European Physical Journal D: Atomic, Molecular, Optical and Plasma Physics*, 72(4), 76. doi:10.1140/epjd/e2018-80617-x

Agostini, M., Bakalyarov, A. M., Balata, M., Barabanov, I., Baudis, L., Bauer, C., ... Zuzel, G. (2018). Upgrade for Phase II of the GERDA experiment. *European Physical Journal C*, 78(5), 388. doi:10.1140/epjc/s10052-018-5812-2

Agostini, M., Bakalyarov, A. M., Balata, M., Barabanov, I., Baudis, L., Bauer, C., ... Zuzel, G. (2018). Improved Limit on Neutrinoless Double- $\beta$  Decay of  $^{76}\text{Ge}$  from GERDA Phase II. *Physical Review Letters*, 120(13), 132503. doi:10.1103/PhysRevLett.120.132503

Agostini, M., Bakalyarov, A. M., Balata, M., Barabanov, I., Baudis, L., Bauer, C., ... Zuzel, G. (2018). GERDA results and the future perspectives for the neutrinoless double beta decay search using Ge-76. *International Journal of Modern Physics A*, 33, 1843004. doi:10.1142/S0217751X18430042

Aharonian, F. A., Akamatsu, H., Akimoto, F., Allen, S. W., Angelini, L., Audard, M., ... Uchida, Y. (2018). Detection of polarized gamma-ray emission from the Crab nebula with the Hitomi Soft Gamma-ray Detector. *Publications of the Astronomical Society of Japan*, 70(6), psy113. doi:10.1093/pasj/psy118

Aharonian, F. A., Akamatsu, H., Akimoto, F., Allen, S. W., Angelini, L., Audard, M., ... Guest, B. (2018). Hitomi X-ray observation of the pulsar wind nebula G21.5-0.9. *Publications of the Astronomical Society of Japan*, 70(3), 38. doi:10.1093/pasj/psy027

Aharonian, F. A., Akamatsu, H., Akimoto, F., Allen, S. W., Angelini, L., Audard, M., ... Zoghbi, A. (2018). Hitomi observations of the LMC SNR N 132 D: Highly redshifted X-ray emission from iron ejecta. *Publications of the Astronomical Society of Japan*, 70(2), 16. doi:10.1093/pasj/psx151

Aharonian, F., Akamatsu, H., Akimoto, F., Allen, S. W., Angelini, L., Audard, M., ... Zoghbi, A. (2018). Atmospheric gas dynamics in the Perseus cluster observed with Hitomi. *Publications of the Astronomical*

Society of Japan, 70(2), 9. doi:10.1093/pasj/psx138

Aharonian, F., Akamatsu, H., Akimoto, F., Allen, S. W., Angelini, L., Audard, M., ... Zoghbi, A. (2018). Temperature structure in the Perseus cluster core observed with Hitomi. *Publications of the Astronomical Society of Japan*, 70(2), 11. doi:10.1093/pasj/psy004

Aharonian, F., Akamatsu, H., Akimoto, F., Allen, S. W., Angelini, L., Audard, M., ... Zoghbi, A. (2018). Measurements of resonant scattering in the Perseus Cluster core with Hitomi SXS. *Publications of the Astronomical Society of Japan*, 70(2), 10. doi:10.1093/pasj/psx127

Aharonian, F., Akamatsu, H., Akimoto, F., Allen, S. W., Angelini, L., Audard, M., ... Raassen, A. J. J. (2018). Atomic data and spectral modeling constraints from high-resolution X-ray observations of the Perseus cluster with Hitomi. *Publications of the Astronomical Society of Japan*, 70(2), 12. doi:10.1093/pasj/psx156

Akhmedov, E. K., Arcadi, G., Lindner, M., & Vogl, S. (2018). Coherent scattering and macroscopic coherence: Implications for neutrino, dark matter and axion detection. *Journal of High Energy Physics : JHEP*, 2018(10), 045. doi:10.1007/JHEP10(2018)045

Alanne, T., Bizot, N., Cacciapaglia, G., & Sannino, F. (2018). Classification of NLO operators for composite Higgs models. *Physical Review D*, 97(07), 075028. doi:10.1103/PhysRevD.97.075028

Alanne, T., & Blasi, S. (2018). The beta-function for Yukawa theory at large N-f (vol 08, 081, 2018). *Journal of High Energy Physics : JHEP*, 2018(9), 165. doi:10.1007/JHEP09(2018)165

Alanne, T., & Blasi, S. (2018). The  $\beta$ -function for Yukawa theory at large Nf. *Journal of High Energy Physics : JHEP*, 2018(08), 081. doi:10.1007/JHEP08(2018)081

Alanne, T., & Blasi, S. (2018). The abelian gauge-Yukawa  $\beta$ -functions at large Nf. *Physical Review D*, 99(11), 116004. doi:10.1103/PhysRevD.98.116004

Alanne, T., Blasi, S., & Goertz, F. (2019). Common source for scalars: Flavored axion-Higgs unification. *Physical Review D*, 99(01), 015028. doi:10.1103/PhysRevD.99.015028

Alanne, T., Franzosi, D. B., Frandsen, M. T., Kristensen, M. L. A., Meroni, A., & Rosenlyst, M. (2018). Partially composite Higgs models: Phenomenology and RG analysis. *Journal of High Energy Physics : JHEP*, 2018(01), 051. doi:10.1007/JHEP01(2018)051

Alanne, T., Franzosi, D. B., Frandsen, M. T., & Rosenlyst, M. (2018). Dark matter in (partially) composite Higgs models. *Journal of High Energy Physics : JHEP*, 2019(12), 088. doi:10.1007/JHEP12(2018)088

Allemandou, N., Almazan, H., Sanchez, P. del A., Bernard, L., Bernard, C., Blanchet, A., ... Zsoldos, S. (2018). The STEREO Experiment. *Journal of Instrumentation*, 13, P07009. doi:10.1088/1748-0221/13/07/P07009

Almazán, H., Sanchez, P. del A., Bernard, L., Blanchet, A., Bonhomme, A., Buck, C., ... Zsoldos, S. (2018). Sterile Neutrino Constraints from the STEREO Experiment with 66 days of Reactor-on Data. *Physical Review Letters*, 121(16), 161801. doi:10.1103/PhysRevLett.121.161801

Alvarez-Muniz, J., Carvalho Jr., W. R., Payet, K., Romero-Wolf, A., Schoorlemmer, H., & Zas, E. (2018). Comprehensive approach to tau-lepton production by high-energy tau neutrinos propagating through the Earth. *Physical Review D*, 97(2), 023021. doi:10.1103/PhysRevD.97.023021

Ames, F., Baartman, R., Barquest, B., Barquest, C., Blessenohl, M., Crespo Lopez-Urrutia, J. R., ... Sami-

- nathan, S. (2018). The CANREB Project for Charge State Breeding at TRIUMF. AIP Conference Proceedings, 2011, 070010. doi:10.1063/1.5053352
- Amini, K., Sclafani, M., Steinle, T., Saavedra, J., Mueller, C., Yue, L., ... Biegert, J. (2018). Direct imaging of ultrafast structural deformations in excited state neutral polyatomic molecules using laser-induced electron diffraction. Abstracts of Papers of the American Chemical Society, 256, 12.
- Angioi, A., & Di Piazza, A. (2018). Quantum Limitation to the Coherent Emission of Accelerated Charges. Physical Review Letters, 121(1), 010402. doi:10.1103/PhysRevLett.121.010402
- Arcadi, G. (2018). 2HDM portal for Singlet-Doublet Dark Matter. European Physical Journal C, 78, 864. doi:10.1140/epjc/s10052-018-6327-6
- Arcadi, G., Campos, M., Lindner, M., Masiero, A., & Queiroz, F. (2018). The Dark Sequential Z' Portal: Collider and Direct Detection Experiments. Physical Review D, 97(04), 043009. doi:10.1103/PhysRevD.97.043009
- Arcadi, G., Dutra, M., Ghosh, P., Lindner, M., Mambrini, Y., Pierre, M., ... Queiroz, F. (2018). The Waning of the WIMP? A Review of Models, Searches, and Constraints. European Physical Journal C - Particles and Fields, 78, 203. doi:10.1140/epjc/s10052-018-5662-y
- Arcadi, G., Ferreira, C. P., Goertz, F., Guzzo, M. M., Queiroz, F., & Santos, A. C. O. (2018). Lepton Flavor Violation Induced by Dark Matter. Physical Review D, 97(07), 075022. doi:10.1103/PhysRevD.97.075022
- Arcadi, G., Hugle, T., & Queiroz, F. (2018). The dark  $L_\mu - L_\tau$  rises via kinetic mixing. Physics Letters B, 84, 151–158. doi:10.1016/j.physletb.2018.07.028
- Arcadi, G., Lindner, M., Queiroz, F., Rodejohann, W., & Vogl, S. (2018). Pseudoscalar Mediators: A WIMP model at the Neutrino Floor. Journal of Cosmology and Astroparticle Physics, 2018(03), 042. doi:10.1088/1475-7516/2018/03/042
- Arenz, M., Baek, W.-J., Beck, M., Beglarian, A., Behrens, J., Bergmann, T., ... Zadoroghny, S. (2018). First transmission of electrons and ions through the KATRIN beamline. Journal of Instrumentation, 13, P04020. doi:10.1088/1748-0221/13/04/P04020
- Arenz, M., Baek, W.-J., Beck, M., Beglarian, A., Behrens, J., Bergmann, T., ... Zadoroghny, S. (2018). Calibration of high voltages at the ppm level by the difference of 83m Kr conversion electron lines at the KATRIN experiment. The European Physical Journal C: Particles and Fields, 78, 368. doi:10.1140/epjc/s10052-018-5832-y
- Arenz, M., Baek, W.-J., Beck, M., Beglarian, A., Behrens, J., Bergmann, T., ... Zadoroghny, S. (2018). The KATRIN Superconducting Magnets: Overview and First Performance Results. Journal of Instrumentation, 13, T08005. doi:10.1088/1748-0221/13/08/T08005
- Asano, A., Berge, D., Bonanno, G., Bryan, M., Ben, G., Grillo, A., ... Zink, A. (2018). Evaluation of silicon photomultipliers for dual-mirror Small-Sized Telescopes of Cherenkov Telescope Array. Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 912, 177–181. doi:10.1016/j.nima.2017.11.017
- Augustin, S., Schulz, M., Schmid, G., Schnorr, K., Gryzlova V, E., Lindenblatt, H. C., ... Moshhammer, R. (2018). Signatures of autoionization in the angular electron distribution in two-photon double ionization of Ar. Physical Review A, 98(3), 033408. doi:10.1103/PhysRevA.98.033408

- Ban, G., Bison, G., Bodek, K., Daum, M., Fertl, M., Franke, B., ... Zsigmond, G. (2018). Demonstration of sensitivity increase in mercury free-spin-precession magnetometers due to laser-based readout for neutron electric dipole moment searches. *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, 896, 129–138. doi:10.1016/j.nima.2018.04.025
- Baumholzer, S., Brdar, V., & Schwaller, P. (2018). The new  $\nu$ MSM ( $\nu\nu$ MSM): radiative neutrino masses, keV-scale dark matter and viable leptogenesis with sub-TeV new physics. *Journal of High Energy Physics : JHEP*, 2018(8), 067. doi:10.1007/JHEP08(2018)067
- Becquet, V., & Cavaletto, S. (2018). Transient-absorption phases with strong probe and pump pulses. *Journal of Physics B: Atomic, Molecular and Optical Physics*, 51, 035501. doi:10.1088/1361-6455/aa8e6a
- Bekker, H., Hensel, C., Daniel, A., Windberger, A., Pfeifer, T., & Crespo López-Urrutia, J. R. (2018). Laboratory precision measurements of optical emissions from coronal iron. *Physical Review A*, 98(6), 062514. doi:10.1103/PhysRevA.98.062514
- Benato, G., Biare, D., Bucci, C., Di Paolo, L., Drobizhev, A., Kadel, R. W., ... Zimmermann, S. (2018). Radium mitigation during the installation of the CUORE  $0\nu\beta\beta$  decay detector. *Journal of Instrumentation*, 13, P01010. doi:10.1088/1748-0221/13/01/P01010
- Benedetti, A., Tamburini, M., & Keitel, C. H. (2018). Giant collimated gamma-ray flashes. *Nature Photonics*, 12, 319–323. doi:10.1038/s41566-018-0139-y
- Beyer, K. A., Reville, B., Bott, A. F. ~A., Park, H.-S., Sarkar, S., & Gregori, G. (2018). Analytical estimates of proton acceleration in laser-produced turbulent plasmas. *Journal of Plasma Physics*, 84(6), 905840608. doi:10.1017/S0022377818001149
- Bilous, P. V., Minkov, N., & Pálffy, A. (2018). Electric quadrupole channel of the 7.8 eV  $^{229}\text{Th}$  transition. *Physical Review C*, 97(4), 044320. doi:10.1103/PhysRevC.97.044320
- Bilous, P., Peik, E., & Pálffy, A. (2018). Laser-induced electronic bridge for characterization of the  $^{229\text{m}}\text{Th} \rightarrow ^{229\text{g}}\text{Th}$  nuclear transition with a tunable optical laser with a tunable optical laser. *New Journal of Physics*, 20, 013016. doi:10.1088/1367-2630/aa9cd9
- Bischer, I., Rodejohann, W., & Xu, X. (2018). Loop-induced Neutrino Non-Standard Interactions. *Journal of High Energy Physics : JHEP*, 2018(10), 96. doi:10.1007/JHEP10(2018)096
- Blessenohl, M., Dobrodey, S., Warnecke, C., Rosner, M., Graham, L., Paul, S., ... Crespo López-Urrutia, J. R. (2018). An electron beam ion trap and source for re-acceleration of rare-isotope ion beams at TRIUMF. *Review of Scientific Instruments*, 89(5), 052401. doi:10.1063/1.5021045
- Bogovalov, S. V., Contopoulos, I., Prosekin, A., Tronin, I., & Aharonian, F. A. (2018). Magnetic absorption of VHE photons in the magnetosphere of the Crab pulsar. *Monthly Notices of the Royal Astronomical Society*, 476(3), 4213–4223. doi:10.1093/mnras/sty455
- Bohman, M., Mooser, A., Schneider, G., Schön, N., Wiesinger, M., Harrington, J., ... Ulmer, S. (2018). Sympathetic cooling of protons and antiprotons with a common endcap Penning trap. *Journal of Modern Optics*, 65(5-6), 601–609. doi:10.1080/09500340.2017.1404656
- Braidotti, M. C., Conti, C., Faizal, M., Dey, S., Alasfar, L., Alsaleh, S., & Ashour, A. (2018). Path integral for non-paraxial optics. *EPL*, 124(4), 44001. doi:10.1209/0295-5075/124/44001



- Brdar, V., Lindner, M., & Xu, X. (2018). Neutrino astronomy with supernova neutrinos. *Journal of Cosmology and Astroparticle Physics*, 2018(04), 025. doi:10.1088/1475-7516/2018/04/025
- Brdar, V., Kopp, J., Liu, J., & Wang, X.-P. (2018). X-Ray Lines from Dark Matter Annihilation at the keV Scale. *Physical Review Letters*, 120(6), 061301. doi:10.1103/PhysRevLett.120.061301
- Brdar, V., Rodejohann, W., & Xu, X. (2018). Producing a new fermion in coherent elastic neutrino-nucleus scattering: from neutrino mass to dark matter. *Journal of High Energy Physics : JHEP*, 2018(12), 024. doi:10.1007/JHEP12(2018)024
- Breitenfeldt, C., Blaum, K., George, S., Göck, J., Guzmán-Ramírez, G., Karthein, J., ... Wolf, A. (2018). Long-Term Monitoring of the Internal Energy Distribution of Isolated Cluster Systems. *Physical Review Letters*, 120(25), 253001. doi:10.1103/PhysRevLett.120.253001
- Burger, C., Atia-Tul-Noor, A., Schnappinger, T., Xu, H., Rosenberger, P., Haram, N., ... Kling, M. F. (2018). Time-resolved nuclear dynamics in bound and dissociating acetylene. *Structural Dynamics*, 5(4), 044302. doi:10.1063/1.5037686
- Capel, P., Durant, V., Huth, L., Hammer, H.-W., Phillips, D. R., & Schwenk, A. (2018). From ab initio structure predictions to reaction calculations via EFT. *Journal of Physics: Conference Series*, 1023(conference 1), 012010. doi:10.1088/1742-6596/1023/1/012010
- Carmona, A., & Goertz, F. (2018). Recent B physics anomalies: a first hint for compositeness? *European Physical Journal C - Particles and Fields*, 78(11), 979. doi:10.1140/epjc/s10052-018-6437-1
- Carpeggiani, P. A., Reduzzi, M., Comby, A., Ahmadi, H., Kuhn, S., Frassetto, F., ... Sansone, G. (2018). Attosecond electronic recollision as field detector. *Journal of Physics B*, 51(10), 104004. doi:10.1088/1361-6455/aabc24
- Carr, R., Coleman, J., Gratta, G., Heeger, K., Huber, P., Hor, Y., ... Zhan, L. (2018). Neutrino physics for Korean diplomacy. *Science*, 362(6415), 649–650. doi:10.1126/science.aav8136
- Catena, R., Conrad, J., Döring, C., Ferella, A. D., & Krauss, M. B. (2018). Dark matter spin determination with directional direct detection experiments. *Physical Review D*, 97(2), 023007. doi:10.1103/PhysRevD.97.023007
- Cerchiari, G., Erlewein, S., Koenig, C., & Kellerbauer, A. (2018). Loading of a continuous anion beam into a Penning trap with a view to laser cooling. *Physical Review A*, 98(2), 021402. doi:10.1103/PhysRevA.98.021402
- Cerchiari, G., Kellerbauer, A., Safronova, M. S., Safronova, U. I., & Yzombard, P. (2018). Ultracold Anions for High-Precision Antihydrogen Experiments. *Physical Review Letters*, 120(13), 133205. doi:10.1103/PhysRevLett.120.133205
- Chen, L., Ren, X., Hossen, K., Wang, E., Chen, X., & Dorn, A. (2018). Two-center interference in electron-impact ionization of molecular hydrogen. *Physical Review A*, 97(2), 022706. doi:10.1103/PhysRevA.97.022706
- Chen ye, Y., Liu, R., & Wang, X.-Y. (2018). Constraints on the bulk Lorentz factor of gamma-ray bursts with the detection rate by Fermi LAT. *Monthly Notices of the Royal Astronomical Society*, 478(1), 749–757. doi:10.1093/mnras/sty1171
- Chen, Y.-Y., Li, J.-X., Hatsagortsyan, K. Z., & Keitel, C. H. (2018).  $\gamma$ -Ray Beams with Large Orbital Angular

Momentum via Nonlinear Compton Scattering with Radiation Reaction. *Physical Review Letters*, 121(7), 074801 . doi:10.1103/PhysRevLett.121.074801

Chhetri, P., Moodley, C. S., Raeder, S., Block, M., Giacompo, F., Goetz, S., ... Walther, T. (2018). Investigation of the First Ionization Potential of Ytterbium in Argon Buffer Gas. *Acta Physica Polonica B*, 49(3), 599–603. doi:10.5506/APhysPolB.49.599

Chiappetti, L., Fotopoulou, S., Lidman, C., Faccioli, L., Pacaud, F., Elyiv, A., ... Wagner, G. (2018). The 3XLSS point source catalogue. *Astronomy and Astrophysics*, 620, A12. doi:10.1051/0004-6361/201731880

Collaboration, H. E. S. S., Abdalla, H., Abramowski, A., Aharonian, F., Ait Benkhali, F., Anguner, E. O., ... Zywucka, N. (2018). Detection of variable VHE gamma-ray emission from the extra-galactic gamma-ray binary LMC P3. *Astronomy and Astrophysics*, 610, L17. doi:10.1051/0004-6361/201732426

Collaboration, H. E. S. S., Abdalla, H., Abramowski, A., Aharonian, F., Ait Benkhali, F., Angüner, E. O., ... Zywucka, N. (2018). The H.E.S.S. Galactic plane survey. *Astronomy and Astrophysics*, 612(Special Issue), A1. doi:10.1051/0004-6361/201732098

Collaboration, H. E. S. S., Abdalla, H., Abramowski, A., Aharonian, F., Ait Benkhali, F., Angüner, E. O., ... Zywucka, N. (2018). H.E.S.S. observations of RX J1713.7-3946 with improved angular and spectral resolution; evidence for gamma-ray emission extending beyond the X-ray emitting shell. *Astronomy and Astrophysics*, 612(Special Issue), A6. doi:10.1051/0004-6361/201629790

Collaboration, H. E. S. S., Abdalla, H., Abramowski, A., Aharonian, F., Ait Benkhali, F., Angüner, E. O., ... Zywucka, N. (2018). The supernova remnant W49B as seen with H.E.S.S. and Fermi-LAT. *Astronomy and Astrophysics*, 612(Special Issue), A5. doi:10.1051/0004-6361/201527843

Collaboration, H. E. S. S., Abdalla, H., Abramowski, A., Aharonian, F., Ait Benkhali, F., Angüner, E. O., ... Zywucka, N. (2018). The population of TeV pulsar wind nebulae in the H.E.S.S. Galactic Plane Survey. *Astronomy and Astrophysics*, 612(Special Issue), A2. doi:10.1051/0004-6361/201629377

Collaboration, H. E. S. S., Abdalla, H., Abramowski, A., Aharonian, F., Ait Benkhali, F., Angüner, E. O., ... Zywucka, N. (2018). Extended VHE gamma-ray emission towards SGR1806-20, LBV1806-20, and stellar cluster Cl\*1806-20. *Astronomy and Astrophysics*, 612(Special Issue), A11. doi:10.1051/0004-6361/201628695

Collaboration, H. E. S. S., Abdalla, H., Abramowski, A., Aharonian, F., Ait Benkhali, F., Angüner, E. O., ... Zywucka, N. (2018). Characterising the VHE diffuse emission in the central 200 parsecs of our Galaxy with H.E.S.S. *Astronomy and Astrophysics*, 612(Special Issue), A9. doi:10.1051/0004-6361/201730824

Collaboration, H. E. S. S., Abdalla, H., Abramowski, A., Aharonian, F., Ait Benkhali, F., Angüner, E. O., ... Zywucka, N. (2018). A search for new supernova remnant shells in the Galactic plane with H.E.S.S. *Astronomy and Astrophysics*, 612(Special Issue), A8. doi:10.1051/0004-6361/201730737

Collaboration, H. E. S. S., Abdalla, H., Abramowski, A., Aharonian, F., Ait Benkhali, F., Angüner, E. O., ... Zywucka, N. (2018). Detailed spectral and morphological analysis of the shell type SNR RCW 86. *Astronomy and Astrophysics*, 612(Special Issue), A4. doi:10.1051/0004-6361/201526545

Collaboration, H. E. S. S., Abdalla, H., Abramowski, A., Aharonian, F., Ait Benkhali, F., Angüner, E. O., ... Zywucka, N. (2018). HESS J1741-302: a hidden accelerator in the Galactic plane. *Astronomy and Astrophysics*, 612(Special Issue), A13. doi:10.1051/0004-6361/201730581

Collaboration, H. E. S. S., Abdalla, H., Abramowski, A., Aharonian, F., Ait Benkhali, F., Angüner, E. O.,

... Zywucka, N. (2018). Population study of Galactic supernova remnants at very high  $\gamma$ -ray energies with H.E.S.S. *Astronomy and Astrophysics*, 612(Special Issue), A3. doi:10.1051/0004-6361/201732125

Collaboration, H. E. S. S., Abdalla, H., Abramowski, A., Aharonian, F., Ait Benkhali, F., Angüner, E. O., ... Zywucka, N. (2018). Systematic search for very-high-energy gamma-ray emission from bow shocks of runaway stars. *Astronomy and Astrophysics*, 612(Special Issue), A12. doi:10.1051/0004-6361/201630151

Collaboration, H. E. S. S., Abdalla, H., Abramowski, A., Aharonian, F., Ait Benkhali, F., Angüner, E. O., ... Zywucka, N. (2018). A search for very high-energy flares from the microquasars GRS 1915+105, Circinus X-1, and V4641 Sgr using contemporaneous H.E.S.S. and RXTE observations. *Astronomy and Astrophysics*, 612(Special Issue), A10. doi:10.1051/0004-6361/201527773

Collaboration, H. E. S. S., Abdalla, H., Abramowski, A., Aharonian, F., Ait Benkhali, F., Angüner, E. O., ... Zywucka, N. (2018). Deeper H.E.S.S. observations of Vela Junior (RX J0852.0–4622): Morphology studies and resolved spectroscopy. *Astronomy and Astrophysics*, 612(Special Issue), A7. doi:10.1051/0004-6361/201630002

Collaboration, H. E. S. S., Collaboration, M., Abdalla, H., Abramowski, A., Aharonian, F., Ait Benkhali, F., ... Zarić, D. (2018). Constraints on particle acceleration in SS433/W50 from MAGIC and H.E.S.S. observations. *Astronomy and Astrophysics*, 612( Special Issue), A14. doi:10.1051/0004-6361/201731169

Cubiss, J. G., Barzakh, A. E., Andreyev, A. N., Monthery, M. A., Althubiti, N., Andel, B., ... Zuber, K. (2018). Change in structure between the  $I=1/2$  states in  $^{181}\text{Tl}$  and  $^{177,179}\text{Au}$ . *Physics Letters B*, 786, 355–363. doi:10.1016/j.physletb.2018.10.005

Cubiss, J. G., Barzakh, A. E., Seliverstov, M. D., Andreyev, A. N., Andel, B., Antalic, S., ... Zuber, K. (2018). Charge radii and electromagnetic moments of  $^{195-211}\text{At}$ . *Physical Review C*, 97(5), 054327. doi:10.1103/PhysRevC.97.054327

Daněk, J., Hatsagortsyan, K. Z., & Keitel, C. H. (2018). Analytical approach to Coulomb focusing in strong-field ionization. I. Nondipole effects. *Physical Review A*, 97(6), 063409. doi:10.1103/PhysRevA.97.063409

Daněk, J., Hatsagortsyan, K. Z., & Keitel, C. H. (2018). Analytical approach to Coulomb focusing in strong-field ionization. II. Multiple recollisions. *Physical Review A*, 97(6), 063410. doi:10.1103/PhysRevA.97.063410

Daněk, J., Klaiber, M., Hatsagortsyan, K. Z., Keitel, C. H., Willenberg, B., Mauer, J., ... Keller, U. (2018). Interplay between Coulomb-focusing and non-dipole effects in strong-field ionization with elliptical polarization. *Journal of Physics B: Atomic, Molecular and Optical Physics*, 51(11), 114001. doi:10.1088/1361-6455/aaba42

De Angelis, A., Tatischeff, V., Grenier, I. A., McEnery, J., Mallamaci, M., Tavani, M., ... Zoglauer, A. (2018). Science with e-ASTROGAM A space mission for MeV-GeV gamma-ray astrophysics. *Journal of High Energy Astrophysics*, 19, 1–106. doi:10.1016/j.jheap.2018.07.001

Di Piazza, A., Tamburini, M., Meuren, S., & Keitel, C. H. (2018). Implementing nonlinear Compton scattering beyond the local-constant-field approximation. *Physical Review A*, 98(1), 012134. doi:10.1103/PhysRevA.98.012134

Di Piazza, A. (2018). Analytical infrared limit of nonlinear Thomson scattering including radiation reaction. *Physics Letters B*, 782, 559–565. doi:10.1016/j.physletb.2018.05.081

Di Piazza, A. (2018). Completeness and orthonormality of the Volkov states and the Volkov propagator in configuration space. *Physical Review D*, 97(5), 056028 . doi:10.1103/PhysRevD.97.056028

Dilling, J., Blaum, K., Brodeur, M., & Eliseev, S. (2018). Penning-Trap Mass Measurements in Atomic and Nuclear Physics. *Annual Review of Nuclear and Particle Sciences*, 68, 45–74. doi:10.1146/annurev-nucl-102711-094939

Domula, A., Hult, M., Kermaidic, Y., Marissens, G., Schwingenheuer, B., Wester, T., & Zuber, K. (2018). Pulse shape discrimination performance of inverted coaxial Ge detectors. *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, 891, 106–110. doi:10.1016/j.nima.2018.02.056

Dong, P. V., Huong, D. T., Queiroz, F., Valle, J. W. F., & Vaquera-Araujo, C. A. (2018). The dark side of flipped trinification. *Journal of High Energy Physics : JHEP*, 2018(4), 143. doi:10.1007/JHEP04(2018)143

Doser, M., Aghion, S., Amsler, C., Bonomi, G., Brusa, R. S., Caccia, M., ... Zurlo, N. (2018). AEGIS at ELENA: outlook for physics with a pulsed cold antihydrogen beam. *Philosophical Transactions of the Royal Society of London A*, 376(2116), 20170274. doi:10.1098/rsta.2017.0274

Durant, V., Capel, P., Huth, L., Balantekin, A. B., & Schwenk, A. (2018). Double-folding potentials from chiral effective field theory. *Physics Letters B*, 782, 668–674. doi:10.1016/j.physletb.2018.05.084

Dutra, M., Lindner, M., Profumo, S., Queiroz, F. S., Rodejohann, W., & Siqueira, C. (2018). MeV Dark Matter Complementarity and the Dark Photon Portal. *Journal of Cosmology and Astroparticle Physics*, 2018(03), 037. doi:10.1088/1475-7516/2018/03/037

Erk, B., Mueller, J. P., Bomme, C., Boll, R., Brenner, G., Chapman, H. N., ... Rolles, D. (2018). CAMP@FLASH: an end-station for imaging, electron- and ion-spectroscopy, and pump-probe experiments at the FLASH free-electron laser. *Journal of Synchrotron Radiation*, 25, 1529–1540. doi:10.1107/S1600577518008585

Farahi, A., Guglielmo, V., Evrard, A. E., Poggianti, B. M., Adami, C., Etti, S., ... Valtchanov, I. (2018). The XXL Survey XXIII. The mass scale of XXL clusters from ensemble spectroscopy. *Astronomy and Astrophysics*, 620, A8. doi:10.1051/0004-6361/201731321

Farzan, Y., Lindner, M., Rodejohann, W., & Xu, X. (2018). Probing neutrino coupling to a light scalar with coherent neutrino scattering. *Journal of High Energy Physics : JHEP*, 2018, 066. doi:10.1007/JHEP05(2018)066

Ferreira Jr., J. G., Pires, C. A. de S., da Silva, P. S. R., & Siqueira, C. (2018). On the Higgs-like boson in the minimal supersymmetric 3-3-1 model. *European Physical Journal C*, 78(3), 225. doi:10.1140/epjc/s10052-018-5705-4

Fieguth, A., Hoferichter, M., Klos, P., Menéndez, J., Schwenk, A., & Weinheimer, C. (2018). Discriminating WIMP-nucleus response functions in present and future XENON-like direct detection experiments. *Physical Review D*, 97(10), 103532. doi:10.1103/PhysRevD.97.103532

Fu, C. Y., Zhang, Y. H., Zhou, X. H., Wang, M., Litvinov, Y. A., Blaum, K., ... Xu, F. R. (2018). Masses of the  $T_z = -3/2$  nuclei  $^{27}\text{P}$  and  $^{29}\text{S}$ . *Physical Review C*, 98(1), 014315. doi:10.1103/PhysRevC.98.014315

Giacinti, G., Kachelriess, M., & Semikoz V. D. (2018). Reconciling cosmic ray diffusion with Galactic magnetic field models. *Journal of Cosmology and Astroparticle Physics*, 2018(7), 051. doi:10.1088/1475-7516/2018/07/051

- Giacinti, G., & Kirk, J. G. (2018). Acceleration of X-Ray Emitting Electrons in the Crab Nebula. *Astrophysical Journal*, 863(1), 18. doi:10.3847/1538-4357/aacffb
- Giacinti, G., & Kirk, J. G. (2018). Cosmic-Ray Anisotropy and the Local Interstellar Turbulence. *Nuclear and Particle Physics Proceedings*, 297–299, 125–128. doi:10.1016/j.nuclphysbps.2018.07.019
- Giacinti, G., & Taylor, A. M. (2018). Galactic Cosmic-Rays in a Breeze. *Nuclear and Particle Physics Proceedings*, 297–299, 63–71. doi:10.1016/j.nuclphysbps.2018.07.010
- Gong, M., Li, X., Zhang, S. B., Niu, S., Ren, X., Wang, E., ... Chen, X. (2018). Multicenter three-distorted-wave approach to three-dimensional images for electron-impact-ionization dynamics of molecules: Overall agreement with experiment. *Physical Review A*, 98(4), 042710. doi:10.1103/PhysRevA.98.042710
- Gorham, P. W., Allison, P., Banerjee, O., Batten, L., Beatty, J. J., Bechtol, K., ... Wissel, S. A. (2018). Constraints on the diffuse high-energy neutrino flux from the third flight of ANITA. *Physical Review D*, 98(2), 022001. doi:10.1103/PhysRevD.98.022001
- Grootes, M. W., Dvornik, A., Laureijs, R. J., Tuffs, R. J., Popescu, C. C., Robotham, A. S. G., ... Wang, L. (2018). Galaxy And Mass Assembly (GAMA): gas fuelling of spiral galaxies in the local Universe II. - direct measurement of the dependencies on redshift and host halo mass of stellar mass growth in central disc galaxies. *Monthly Notices of the Royal Astronomical Society*, 477(1), 1015–1034. doi:10.1093/mnras/sty688
- Gu, L., Mao, J., de Plaa, J., Raassen, A. J. J., Shah, C., & Kaastra, J. S. (2018). Charge exchange in galaxy clusters. *Astronomy and Astrophysics*, 611, A26. doi:10.1051/0004-6361/201731861
- Guglielmo, V., Poggianti, B. M., Vulcani, B., Adami, C., Gastaldello, F., Ettori, S., ... Willis, J. (2018). The XXL Survey: XXII. The XXL-North spectrophotometric sample and galaxy stellar mass function in X-ray detected groups and clusters. *Astronomy and Astrophysics*, 620, A7. doi:10.1051/0004-6361/201730709
- Gunst, J., Wu, Y., Keitel, C. H., & Pálffy, A. (2018). Nuclear excitation by electron capture in optical-laser-generated plasmas. *Physical Review E*, 97(6), 063205. doi:10.1103/PhysRevE.97.063205
- Guo, C., Harth, A., Carlstrom, S., Cheng, Y.-C., Mikaelsson, S., Marsell, E., ... L'Huillier, A. (2018). Phase control of attosecond pulses in a train. *Journal of Physics B: Atomic, Molecular and Optical Physics*, 51(3), 034006. doi:10.1088/1361-6455/aa9953
- Abdalla, H., Aharonian, F., Ait Benkhali, F., Angüner, E. O., Arakawa, M., Arcaro, C., ... Żywucka, N. (2018). VHE gamma-ray discovery and multi-wavelength study of the blazar 1ES 2322-409. *Monthly Notices of the Royal Astronomical Society*, 482(3), 3011–3022. doi:10.1093/mnras/sty2686
- Hammen, M., Nörtershäuser, W., Balabanski, D. L., Bissell, M. L., Blaum, K., Budinčević, I., ... Yordanov, D. T. (2018). From Calcium to Cadmium: Testing the Pairing Functional through Charge Radii Measurements of 100-130Cd. *Physical Review Letters*, 121(10), 102501. doi:10.1103/PhysRevLett.121.102501
- Hansen, R. S. L., & Smirnov, A. (2018). Neutrino conversion in a neutrino flux: towards an effective theory of collective oscillations. *Journal of Cosmology and Astroparticle Physics*, 2018(4), 057. doi:10.1088/1475-7516/2018/04/057
- Harth, A., Guo, C., Cheng, Y.-C., Losquin, A., Miranda, M., Mikaelsson, S., ... Arnold, C. L. (2018). Compact 200kHz HHG source driven by a few-cycle OPCPA. *Journal of Optics*, 20(1), 014007. doi:10.1088/2040-8986/aa9b04

- HAWC Collaboration Abeysekara, A. U., Albert, A. M., Alfaro, R., Alvarez, C., Álvarez, J. D., Arceo, R., ... Zhou, H. (2018). A Search for Dark Matter in the Galactic Halo with HAWC. *Journal of Cosmology and Astroparticle Physics*, 2018(02), 049. doi:10.1088/1475-7516/2018/02/049
- HAWC Collaboration Abeysekara, A. U., Albert, A., Alfaro, R., Alvarez, C., Arceo, R., Arteaga-Velázquez, J. C., ... Alvarez, J. D. (2018). Constraining the p-/p Ratio in TeV Cosmic Rays with Observations of the Moon Shadow by HAWC. *Physical Review D*, 97(10), 102005. doi:10.1103/PhysRevD.97.102005
- HAWC Collaboration, Abeysekara, A. U., Albert, A., Alfaro, R., Alvarez, C., Álvarez, J. D., ... Zhou, H. (2018). Very high energy particle acceleration powered by the jets of the microquasar SS 433. *Nature*, 562(7725), 82–85. doi:10.1038/s41586-018-0565-5
- HAWC Collaboration, Abeysekara, A. U., Alfaro, R., Alvarez, C., Alvarez, J. D., Arceo, R., ... Zhou, H. (2018). Observation of Anisotropy of TeV Cosmic Rays with Two Years of HAWC. *Astrophysical Journal*, 865(1), 57. doi:10.3847/1538-4357/aad90c
- HAWC collaboration, Albert, A., Alfaro, R., Alvarez, C., Álvarez, J. D., Arceo, R., ... Zhou, H. (2018). Dark Matter Limits From Dwarf Spheroidal Galaxies with The HAWC Gamma-Ray Observatory. *Astrophysical Journal*, 853(2), 154. doi:10.3847/1538-4357/aaa6d8
- HAWC collaboration, Albert, A., Alfaro, R., Alvarez, C., Alvarez, J. D., Arceo, R., ... Zhou, H. (2018). Search for Dark Matter Gamma-ray Emission from the Andromeda Galaxy with the High-Altitude Water Cherenkov Observatory. *Journal of Cosmology and Astroparticle Physics*, 2018(06), 043. doi:10.1088/1475-7516/2018/06/043
- HAWC Collaboration Albert, A., Alfaro, R., Alvarez, C., Arceo, R., Arteaga-Velázquez, J. C., Rojas, D. A., ... Zhou, B. (2018). First HAWC Observations of the Sun Constrain Steady TeV Gamma-Ray Emission. *Physical Review D*, 98(12), 123011. doi:10.1103/PhysRevD.98.123011
- HAWC Collaboration Albert, A., Alfaro, R., Alvarez, C., Arceo, R., Arteaga-Velázquez, J. C., Rojas, D. A., ... Zhou, B. (2018). Constraints on Spin-Dependent Dark Matter Scattering with Long-Lived Mediators from TeV Observations of the Sun with HAWC. *Physical Review D*, 98(12), 123012. doi:10.1103/PhysRevD.98.123012
- He, P.-L., Klaiber, M., Hatsagortsyan, K. Z., & Keitel, C. H. (2018). High-energy direct photoelectron spectroscopy in strong-field ionization. *Physical Review A*, 98(5), 053428. doi:10.1103/PhysRevA.98.053428
- Heeck, J., & Rodejohann, W. (2018). Lepton Flavor Violation with Displaced Vertices. *Physics Letters B*, 776, 385–390. doi:10.1016/j.physletb.2017.11.067
- Higuchi, T., Harrington, J. A., Borchert, M. J., Blessing, P. E., Devlin, J. A., Morgner, J., ... Ulmer, S. (2018). Progress towards an improved comparison of the proton-to-antiproton charge-to-mass ratios. *Hyperfine Interactions*, 239, 27. doi:10.1007/s10751-018-1499-x
- Hofmann, W., & Hinton, J. (2018). Detectors for high-energy messengers from the Universe. *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, 907, 31–45. doi:10.1016/j.nima.2018.03.020
- Hossen, K., Ren, X., Wang, E., Gong, M., Li Xingyu, Zhang, S. B., ... Dorn, A. (2018). Triple-differential cross sections for single ionization of CO<sub>2</sub> by 100eV electron impact. *Journal of Physics B: Atomic, Molecular and Optical Physics*, 51(21), 215201. doi:10.1088/1361-6455/aae0ab
- Hossen, K., Ren, X., Wang, E., Kumar s, S. V. K., & Dorn, A. (2018). An (e, 2e+ion) study of electron-

impact ionization and fragmentation of tetrafluoromethane at low energies. *European Physical Journal C - Particles and Fields*, 72(3), 43. doi:10.1140/epjd/e2017-80665-8

Hugle, T., Platscher, M., & Schmitz, K. (2018). Low-Scale Leptogenesis in the Scotogenic Neutrino Mass Model. *Physical Review D*, 98(02), 023020. doi:10.1103/PhysRevD.98.023020

Huth, L., Durant, V., Simonis, J., & Schwenk, A. (2018). Shell-model interactions from chiral effective field theory. *Physical Review C*, 98(04), 044301. doi:10.1103/PhysRevC.98.044301

Ibarra, A., Molinaro, E., & Vogl, S. (2018). Potential for probing three-body decays of Long-Lived Particles with MATHUSLA. *Physics Letters B*, 789, 127–131. doi:10.1016/j.physletb.2018.12.015

IceCube, Fermi-LAT, MAGIC, AGILE, ASAS-SN, HAWC, ... Hofmann. (2018). Multi-messenger observations of a flaring blazar coincident with high-energy neutrino IceCube-170922A. *Science*, 361(6398), eaat1378. doi:10.1126/science.aat1378

Jager, M. F., Ott, C., Kaplan, C. J., Kraus, P. M., Neumark, D. M., & Leone, S. R. (2018). Attosecond transient absorption instrumentation for thin film materials: Phase transitions, heat dissipation, signal stabilization, timing correction, and rapid sample rotation. *Review of Scientific Instruments*, 89(1), 013109. doi:10.1063/1.4994041

Jentschel, M., & Blaum, K. (2018). Balancing energy and mass with neutrons. *Nature Physics*, 14, 524–524. doi:10.1038/s41567-018-0132-x

Kafexhiu, E., Romoli, C., Taylor, A. M., & Aharonian, F. (2018). Energetic Gamma-Ray Emission from Solar Flares. *Astrophysical Journal*, 864(2), 148. doi:10.3847/1538-4357/aad801

Kang, H.-P., Xu, S.-P., Wang, Y.-L., Yu, S.-G., Zhao, X.-Y., Hao, X.-L., ... Xu, Z.-Z. (2018). Polarization effects in above-threshold ionization with a mid-infrared strong laser field. *Journal of Physics B: Atomic, Molecular and Optical Physics*, 51(10), 105601. doi:10.1088/1361-6455/aabce0

KATRIN Collaboration, Arenz, M., Baek, W.-J., Bauer, S., Beck, M., Beglarian, A., ... Zadoroghny, S. (2018). Reduction of stored-particle background by a magnetic pulse method at the KATRIN experiment. *European Physical Journal C*, 78, 778. doi:10.1140/epjc/s10052-018-6244-8

Katsoulakos, G., & Rieger, F. M. (2018). Magnetospheric Gamma-Ray Emission in Active Galactic Nuclei. *Astrophysical Journal*, 852(2), 112. doi:10.3847/1538-4357/aaa003

Kellerbauer, A., & Mischke, A. (2018). Tribute to Thomas W. B. Kibble - Perspectives in Fundamental Physics. *European Review*, 26(1), 67–69. doi:10.1017/S1062798717000771

Khangulyan, D., Koldoba, A. V., Ustyugova, G. V., Bogovalov, S. V., & Aharonian, F. (2018). On the Anomalously Large Extension of the Pulsar Wind Nebula HESS J1825-137. *Astrophysical Journal*, 860(1), 59. doi:10.3847/1538-4357/aac20f

Klaiber, M., Hatsagortsyan, K. Z., & Keitel, C. H. (2018). Under-the-Tunneling-Barrier Recollisions in Strong-Field Ionization. *Physical Review Letters*, 120(1), 013201. doi:10.1103/PhysRevLett.120.013201

Klos, P., König, S., Hammer, H.-W., Lynn, J. E., & Schwenk, A. (2018). Signatures of few-body resonances in finite volume. *Physical Review C*, 98(03), 034004. doi:10.1103/PhysRevC.98.034004

Kozlov, M. G., Safronova, M. S., Crespo López-Urrutia, J. R., & Schmidt, P. O. (2018). Highly charged ions: Optical clocks and applications in fundamental physics. *Reviews of Modern Physics*, 90, 045005.

Kuebel, M., Arbeiter, M., Burger, C., Kling, N. G., Pischke, T., Moshhammer, R., ... Bergues, B. (2018). Phase- and intensity-resolved measurements of above threshold ionization by few-cycle pulses. *Journal of Physics B: Atomic, Molecular and Optical Physics*, 51(13), 134007. doi:10.1088/1361-6455/aac584

Kumar, S., Grussie, F., Suleimanov, Y. V., Guo, H., & Kreckel, H. (2018). Low temperature rates for key steps of interstellar gas-phase water formation. *Science Advances*, 4(6), eaar3417. doi:10.1126/sciadv.aar3417

Larsen, K. A., Trevisan, C. S., Lucchese, R. R., Heck, S., Iskandar, W., Champenois, E., ... Rescigno, T. N. (2018). Resonance signatures in the body-frame valence photoionization of CF<sub>4</sub>. *Physical Chemistry Chemical Physics*, 20(32), 21075–21084. doi:10.1039/c8cp03637c

Lassalle, E., Champenois, C., Stout, B., Debierre, V., & Durt, T. (2018). Conditions for anti-Zeno-effect observation in free-space atomic radiative decay. *Physical Review A*, 97(6), 062122. doi:10.1103/PhysRevA.97.062122

Leistenschneider, E., Reiter, M. P., Andrés, S. A. S., Kootte, B., Holt, J. D., Navrátil, P., ... Dilling, J. (2018). Dawning of the N=32 shell closure seen through precision massmeasurements of neutron-rich titanium isotopes. *Physical Review Letters*, 120(6), 062503. doi:10.1103/PhysRevLett.120.062503

LHCb collaboration, Aaij, R., Adeva, B., Adinolfi, M., Aidala, C. A., Ajaltouni, Z., Akar, S., ... Zucchelli, S. (2018). Observation of the decay  $\Lambda_b^0 \rightarrow \psi(2S)p\pi^-$ . *Journal of High Energy Physics : JHEP*, 2018(8), 131. doi:10.1007/JHEP08(2018)131

LHCb collaboration, Aaij, R., Adeva, B., Adinolfi, M., Aidala, C. A., Ajaltouni, Z., Akar, S., ... Zucchelli, S. (2018). Measurement of the time-integrated CP asymmetry in  $D^0 \rightarrow K_s^0 K_s^0$  decays. *Journal of High Energy Physics : JHEP*, (11), 048. doi:10.1007/JHEP11(2018)048

LHCb collaboration, Aaij, R., Adeva, B., Adinolfi, M., Ajaltouni, Z., Akar, S., Albicocco, P., ... Zucchelli, S. (2018). Measurement of CP asymmetries in two-body  $B_{(s)}^0$ -meson decays to charged pions and kaons. *Physical Review D*, 98(3), 032004. doi:10.1103/PhysRevD.98.032004

LHCb collaboration, Aaij, R., Adeva, B., Adinolfi, M., Ajaltouni, Z., Akar, S., Albicocco, P., ... Zucchelli, S. (2018). Evidence for the decay  $B_s^0 \rightarrow K^{*0}\mu^+\mu^-$ . *Journal of High Energy Physics : JHEP*, 2018(7), 020. doi:10.1007/JHEP07(2018)020

LHCb collaboration, Aaij, R., Adeva, B., Adinolfi, M., Ajaltouni, Z., Akar, S., Albrecht, J., ... Zucchelli, S. (2018). First observation of forward  $Z \rightarrow b(\bar{b})$  production in pp collisions at root s=8 TeV. *Physics Letters B*, 776, 430–439. doi:10.1016/j.physletb.2017.11.066

LHCb collaboration, Aaij, R., Adeva, B., Adinolfi, M., Ajaltouni, Z., Akar, S., Albrecht, J., ... Zucchelli, S. (2018). Measurement of CP observables in  $B^\pm \rightarrow D^{(*)}K^\pm$  and  $B^\pm \rightarrow D^{(*)}\pi^\pm$  decays. *Physics Letters B*, 777, 16–30. doi:10.1016/j.physletb.2017.11.070

LHCb collaboration, Aaij, R., Adeva, B., Adinolfi, M., Ajaltouni, Z., Akar, S., Albrecht, J., ... Zucchelli, S. (2018). Search for Dark Photons Produced in 13 TeV pp Collisions. *Physical Review Letters*, 120(6), 061801. doi:10.1103/PhysRevLett.120.061801

LHCb collaboration, Aaij, R., Adeva, B., Adinolfi, M., Ajaltouni, Z., Akar, S., Albrecht, J., ... Zucchelli, S. (2018). Studies of the resonance structure in  $D^0 \rightarrow K^\pm \pi^\pm \pi^\pm$  decays. *European Physical Journal C*, 78(6), 443. doi:10.1140/epjc/s10052-018-5758-4



- LHCb collaboration, Aaij, R., Adeva, B., Adinolfi, M., Ajaltouni, Z., Akar, S., Albrecht, J., ... Zucchelli, S. (2018). Test of lepton flavor universality by the measurement of the  $B^0 \rightarrow D^+ \tau^+ \nu_\tau$  branching fraction using three-prong  $\tau$  decays. *Physical Review D*, 97(7), 072013. doi:10.1103/PhysRevD.97.072013
- LHCb collaboration, Aaij, R., Adeva, B., Adinolfi, M., Ajaltouni, Z., Akar, S., Albrecht, J., ... Zucchelli, S. (2018). A measurement of the CP asymmetry difference between  $\Lambda c^+ \rightarrow p K^- K^+$  and  $p \pi^- \pi^+$  decays. *Journal of High Energy Physics : JHEP*, 2018(3), 182. doi:10.1007/JHEP03(2018)182
- LHCb collaboration, Aaij, R., Beteta, C. A., Ackernley, T., Adeva, B., Adinolfi, M., ... Zucchelli, S. (2018). Measurement of Antiproton Production in pHe Collisions at  $\sqrt{s_{NN}}=110$  GeV. *Physical Review Letters*, 121(22), 222001. doi:10.1103/PhysRevLett.121.222001
- Li, J.-X., Chen, Y.-Y., Hatsagortsyan, K. Z., & Keitel, C. H. (2018). Single-Shot Carrier-Envelope Phase Determination of Long Superintense Laser Pulses. *Physical Review Letters*, 120(12), 124803. doi:10.1103/PhysRevLett.120.124803
- Li, Y.-F., Zhao, Y.-T., Hatsagortsyan, K. Z., Keitel, C. H., & Li Jian-Xing. (2018). Electron-angular-distribution reshaping in the quantum radiation-dominated regime. *Physical Review A*, 98(5), 052120. doi:10.1103/PhysRevA.98.052120
- Lindner, M., Queiroz, F., Rodejohann, W., & Xu, X. (2018). Neutrino-Electron Scattering: General Constraints on  $Z'$  and Dark Photon Models. *Journal of High Energy Physics : JHEP*, 2018, 098. doi:10.1007/JHEP05(2018)098
- Lindner, M., Rodejohann, W., & Xu, X.-J. (2018). Neutrino parameters from reactor and accelerator neutrino experiments. *Physical Review D*, 97(7), 075024. doi:10.1103/PhysRevD.97.075024
- Liu, R.-Y., Murase, K., Inoue, S., Ge, C., & Wang, X.-Y. (2018). Can Winds Driven by Active Galactic Nuclei Account for the Extragalactic Gamma-Ray and Neutrino Backgrounds? *Astrophysical Journal*, 858(1), 9. doi:10.3847/1538-4357/aaba74
- Lonardonì, D., Carlson, J., Gandolfi, S., Lynn, J. E., Schmidt, K. E., Schwenk, A., & Wang, X. B. (2018). Properties of Nuclei up to  $A=16$  using Local Chiral Interactions. *Physical Review Letters*, 120(12), 122502. doi:10.1103/PhysRevLett.120.122502
- Lonardonì, D., Gandolfi, S., Lynn, J. E., Petrie, C., Carlson, J., Schmidt, K. E., & Schwenk, A. (2018). Auxiliary field diffusion Monte Carlo calculations of light and medium-mass nuclei with local chiral interactions. *Physical Review C*, 97(4), 044318. doi:10.1103/PhysRevC.97.044318
- López-Coto, R., Parsons, R. D., Hinton, J. A., & Giacinti, G. (2018). An undiscovered pulsar in the Local Bubble as an explanation of the local high energy cosmic ray electron spectrum. *Physical Review Letters*, 121(25), 251106. doi:10.1103/PhysRevLett.121.251106
- Lopez-Coto, R., Hahn, J., BenZvi, S., Dingus, B., Hinton, J., Nisa, M. U., ... Zhou, H. (2018). Effect of the diffusion parameters on the observed gamma-ray spectrum of sources and their contribution to the local all-electron spectrum: The EDGE code. *Astroparticle Physics*, 102, 1–11. doi:10.1016/j.astropartphys.2018.04.003
- Lopez-Coto, R., & Giacinti, G. (2018). Constraining the properties of the magnetic turbulence in the Geminga region using HAWC gamma-ray data. *Monthly Notices of the Royal Astronomical Society*, 479(4), 4526–4534. doi:10.1093/mnras/sty1821
- Lopez-Oramas, A., Blanch, O., de Ona Wilhelmi, E., Fernandez-Barral, A., Hadasch, D., Moretti, E., ... Za-

- nin, R. (2018). VHE observations of binary systems performed with the MAGIC telescopes. *International Journal of Modern Physics D*, 27(10), 1844011. doi:10.1142/S0218271818440108
- Lu, F., Grieser, M., Zhang, C., & Wang, Y. (2018). 3-D Nonlinear Theory for Sheet-Beam Folded-Waveguide Traveling-Wave Tubes. *IEEE Transactions on Electron Devices*, 65(11), 5103–5110. doi:10.1109/TED.2018.2871848
- Lubashevskiy, A., Agostini, M., Budjas, D., Gangapshev, A., Gusev, K., Heisel, M., ... Zuzel, G. (2018). Mitigation of  $^{42}\text{Ar}/^{42}\text{K}$  background for the GERDA Phase II experiment. *European Physical Journal C*, 78(1), 15. doi:10.1140/epjc/s10052-017-5499-9
- Lv, Q. Z., Dong, S., Li, Y. T., Sheng, Z. M., Su, Q., & Grobe, R. (2018). Role of the spatial inhomogeneity on the laser-induced vacuum decay. *Physical Review A*, 97(2), 022515. doi:10.1103/PhysRevA.97.022515
- Lv, Q. Z., Dong, S., Lisowski, C., Pelphey, R., Li, Y. T., Su, Q., & Grobe, R. (2018). Quantum-mechanical approach to the laser-assisted vacuum decay. *Physical Review A*, 97(5), 053416. doi:10.1103/PhysRevA.97.053416
- Lv, Q. Z., Su, Q., & Grobe, R. (2018). Manipulation of the Vacuum to Control Its Field-Induced Decay. *Physical Review Letters*, 121(18), 183606. doi:10.1103/PhysRevLett.121.183606
- Mackenroth, F., & Di Piazza, A. (2018). Nonlinear trident pair production in an arbitrary plane wave: A focus on the properties of the transition amplitude. *Physical Review D*, 98(11), 116002. doi:10.1103/PhysRevD.98.116002
- Marcowith, A., Dwarkadas, V. V., Renaud, M., Tatischeff, V., & Giacinti, G. (2018). Core-collapse supernovae as cosmic ray sources. *Monthly Notices of the Royal Astronomical Society*, 479(4), 4470–4485. doi:10.1093/mnras/sty1743
- Marsh, B. A., Goodacre, T. D., Sels, S., Tsunoda, Y., Andel, B., Andreyev, A. N., ... Zuber, K. (2018). Characterization of the shape-staggering effect in mercury nuclei. *Nature Physics*, 14, 1163–1167. doi:10.1038/s41567-018-0292-8
- Mauer, J., Willenberg, B., Daněk, J., Mayer, B. W., Phillips, C. R., Gallmann, L., ... Keller, U. (2018). Probing the ionization wave packet and recollision dynamics with an elliptically polarized strong laser field in the nondipole regime. *Physical Review A*, 97(1), 013404. doi:10.1103/PhysRevA.97.013404
- Max, K., Platscher, M., & Smirnov, J. (2018). Decoherence of Gravitational Wave Oscillations in Bigravity. *Physical Review D*, 97(06), 064009. doi:10.1103/PhysRevD.97.064009
- Micke, P., Kühn, S., Buchauer, L., Harries, J. R., Bücking, T. M., Blaum, K., ... Crespo López-Urrutia, J. R. (2018). The Heidelberg compact electron beam ion traps. *Review of Scientific Instruments*, 89(5), 063109. doi:10.1063/1.5026961
- Miniati, F., Gregori, G., Reville, B., & Sarkar, S. (2018). Axion-Driven Cosmic Magnetogenesis during the QCD Crossover. *Physical Review Letters*, 121(2), 021301. doi:10.1103/PhysRevLett.121.021301
- Mooser, A., Rischka, A., Schneider, A., Blaum, K., Ulmer, S., & Walz, J. (2018). A New Experiment for the Measurement of the g-Factors of  $3\text{He}^+$  and  $3\text{He}^{2+}$ . *Journal of Physics: Conference Series*, 1138(conference 1), 012004. doi:10.1088/1742-6596/1138/1/012004
- Morris, B. M., Tollerud, E., Sipocz, B., Deil, C., Douglas, S. T., Medina, J. B., ... Jeschke, E. (2018). astropplan: An Open Source Observation Planning Package in Python. *Astronomical Journal*, 155(3), 128.

doi:10.3847/1538-3881/aaa47e

Morris, T. D., Simonis, J., Stroberg, S. R., Stumpf, C., Hagen, G., Holt, J. D., ... Schwenk, A. (2018). Structure of the lightest tin isotopes. *Physical Review Letters*, 120(15), 152503. doi:10.1103/PhysRevLett.120.152503

Mougeot, M., Atanasov, D., Blaum, K., Chrysalidis, K., Day Goodacre, T., Fedorov, D., ... Zuber, K. (2018). Precision Mass Measurements of  $^{58-63}\text{Cr}$ : Nuclear Collectivity Towards the  $N=40$  Island of Inversion. *Physical Review Letters*, 120(23), 232501. doi:10.1103/PhysRevLett.120.232501

Nayerhoda, A., Greus, F. S., & Casanova, S. (2018). TeV Diffuse Emission From the Inner Galaxy. *Frontiers in Astronomy and Space Science*, 5, UNSP 8. doi:10.3389/fspas.2018.00008

Nickerson, B., Liao, W.-T., & Pálffy, A. (2018). Collective effects in  $^{229}\text{Th}$ -doped crystals. *Physical Review A*, 98(6), 062520. doi:10.1103/PhysRevA.98.062520

Nilles, H. P., Ratz, M., Trautner, A., & Vaudrevange, P. K. S. (2018). CP Violation from String Theory. *Physics Letters B*, 786, 283–287. doi:10.1016/j.physletb.2018.09.053

Novotny, O., Buhr, H., Geppert, W., Grieser, M., Hamberg, M., Krantz, C., ... Wolf, A. (2018). Dissociative Recombination Measurements of Chloronium Ions ( $\text{D}_2\text{Cl}^+$ ) Using an Ion Storage Ring. *Astrophysical Journal*, 862(2), 166. doi:10.3847/1538-4357/aacefc

Owen, E. R., Jacobsen, I. B., Wu, K., & Surajbali, P. (2018). Interactions between ultra-high-energy particles and protogalactic environments. *Monthly Notices of the Royal Astronomical Society*, 481(1), 666–687. doi:10.1093/mnras/sty2279

Pande, K., Donatelli, J. J., Malmerberg, E., Foucar, L., Poon, B. K., Sutter, M., ... Zwart, P. H. (2018). Data Descriptor: Free-electron laser data for multiple-particle fluctuation scattering analysis. *Scientific Data*, 5, 180201. doi:10.1038/sdata.2018.201

Patoary, A. S. M., & Oreshkina, N. (2018). Finite nuclear size effect to the fine structure of heavy muonic atoms. *European Physical Journal D: Atomic, Molecular, Optical and Plasma Physics*, 72(3), 54. doi:10.1140/epjd/e2018-80545-9

Pérez, E. A. C., Menéndez, J., & Schwenk, A. (2018). Gamow-Teller and double- $\beta$  decays of heavy nuclei within an effective theory. *Physical Review C*, 98(04), 045501. doi:10.1103/PhysRevC.98.045501

Pierce, A., Shah, N. R., & Vogl, S. (2018). Stop Co-Annihilation in the Minimal Supersymmetric Standard Model Revisited. *Physical Review D*, 97(2), 023008. Retrieved from <http://hdl.handle.net/21.11116/0000-0000-B46D-B>

Platscher, M., Smirnov, J., Meyer, S., & Bartelmann, M. (2018). Long Range Effects in Gravity Theories with Vainshtein Screening. *Journal of Cosmology and Astroparticle Physics*, 2018(12), 009. doi:10.1088/1475-7516/2018/12/009

Poder, K., Tamburini, M., Sarri, G., Di Piazza, A., Kuschel, S., Baird, C. D., ... Zepf, M. (2018). Experimental Signatures of the Quantum Nature of Radiation Reaction in the Field of an Ultraintense Laser. *Physical Review X*, 8(3), 031004. doi:10.1103/PhysRevX.8.031004

Price-Whelan, A. M., Sipocz, B. M., Gunther, H. M., Lim, P. L., Crawford, S. M., Conseil, S., ... Zabalza, V. (2018). The Astropy Project: Building an Open-science Project and Status of the v2.0 Core Package. *Astronomical Journal*, 156(3), 123. doi:10.3847/1538-3881/aabc4f

- Prince, R., Raman, G., Hahn, J., Gupta, N., & Majumdar, P. (2018). Fermi-Large Area Telescope Observations of the Brightest Gamma-Ray Flare Ever Detected from CTA 102. *Astrophysical Journal*, 866(1), 16. doi:10.3847/1538-4357/aadadb
- Profumo, S., Queiroz, F., Silk, J., & Siqueira, C. (2018). Searching for secluded dark matter with HESS, Fermi-LAT, and Planck. *Journal of Cosmology and Astroparticle Physics*, 2018(3), 010. doi:10.1088/1475-7516/2018/03/010
- Pürckhauer, S., Hermann, G., & Werner, F. (2018). Evaluation of light concentrators for cameras of the medium-sized telescopes of the Cherenkov Telescope Array. *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, 912, 97–100. doi:10.1016/j.nima.2017.10.064
- Queiroz, F., Valle, J. W. F., Mambrini, Y., & Arcadi, G. (2018). New Physics Landmarks: Dark Matter and Neutrino Masses. *Advances in High Energy Physics*, 2018, 2652536. doi:10.1155/2018/2652536
- Ramien, G. N., Gunst, J., Kong, X., & Pálffy, A. (2018). X-ray-frequency modulation via periodic switching of an external magnetic field. *Physical Review A*, 97(6), 063858. doi:10.1103/PhysRevA.97.063858
- Reiter, M. P., Andrés, S. A. S., Dunling, E., Kootte, B., Leistenschneider, E., Andreoiu, C., ... Dilling, J. (2018). Quenching of the  $N = 32$  neutron shell closure studied via precision mass measurements of neutron-rich vanadium isotopes. *Physical Review C*, 98(2), 024310. doi:10.1103/PhysRevC.98.024310
- Ren, X., Wang, E., Skitnevskaya, A. D., Trofimov, A. B., Gokhberg, K., & Dorn, A. (2018). Experimental evidence for ultrafast intermolecular relaxation processes in hydrated biomolecules. *Nature Physics*, 14(10), 1062–1066. doi:10.1038/s41567-018-0214-9
- Rigby, A., Cruz, F., Albertazzi, B., Bamford, R., Bell, A.-R., Cross, J.-E., ... Gregori, G. (2018). Electron acceleration by wave turbulence in a magnetized plasma. *Nature Physics*, 14(5), 475–479. doi:10.1038/s41567-018-0059-2
- Romoli, C., Chakraborty, N., Dorner, D., Taylor, A. M., & Blank, M. (2018). Flux Distribution of Gamma-Ray Emission in Blazars: The Example of Mrk 501. *Galaxies*, 6(4), 135. doi:10.3390/galaxies6040135
- Rudek, B., Toyota, K., Foucar, L., Erk, B., Boll, R., Bomme, C., ... Rolles, D. (2018). Relativistic and resonant effects in the ionization of heavy atoms by ultra-intense hard X-rays. *Communications Physics*, 9, 4200. doi:10.1038/s41467-018-06745-6
- Rupp, N. (2018). Radon background in liquid xenon detectors. *Journal of Instrumentation*, 13, C02001. doi:10.1088/1748-0221/13/02/C02001
- Salamin, Y. (2018). Fields of a Bessel-Bessel light bullet of arbitrary order in an under-dense plasma. *Scientific Reports*, 8, 11362. doi:10.1038/s41598-018-29694-y
- Sampath, A., & Tamburini, M. (2018). Towards realistic simulations of QED cascades: Non-ideal laser and electron seeding effects. *Physics of Plasmas*, 25(8), 083104. doi:10.1063/1.5022640
- Schmidt, S., Billowes, J., Bissell, M. L., Blaum, K., Garcia Ruiz, R. F., Heylen, H., ... Yang, X. F. (2018). The nuclear magnetic moment of  $^{208}\text{Bi}$  and its relevance for a test of bound-state strong-field QED. *Physics Letters B*, 779, 324–330. doi:10.1016/j.physletb.2018.02.024
- Shaaran, T., Hatsagortsyan, K. Z., & Keitel, C. H. (2018). Coulomb effect in laser-induced recollision excitation. *Physical Review A*, 98(2), 023410. doi:10.1103/PhysRevA.98.023410

- Shah, C., Amaro, P., Steinbrügge, R. F., Bernitt, S., Crespo López-Urrutia, J. R., & Tashenov, S. (2018). Polarization of K-shell Dielectronic Recombination Satellite Lines of Fe xix–xxv and Its Application for Diagnostics of Anisotropies of Hot Plasmas. *The Astrophysical Journal Supplement Series*, 234(2), 1–25. doi:10.3847/1538-4365/aaa4c0
- Sharma, S., Acharya, B. P., De Silva, A. H. N. C., Parris, N. W., Ramsey, B. J., Romans, K. L., ... Fischer, D. (2018). All-optical atom trap as a target for MOTRIMS-like collision experiments. *Physical Review A*, 97(4), 043427. doi:10.1103/PhysRevA.97.043427
- Sikora, B., Cakir, H., Michel, N., Debierre, V., Oreshkina, N., Belov, N., ... Harman, Z. (2018). Improving the accuracy of the muon mass and magnetic moment anomaly via the bound-muon g factor. *Physical Review D*, 97(11), 111301(R). doi:10.1103/PhysRevD.97.111301
- Singh, K. P., Kenfack, A., Rost, J. M., & Pfeifer, T. (2018). Control of molecular breakup by an infrared pulse and a femtosecond pulse train. *Physical Review A*, 97(3), 033406. doi:10.1103/PhysRevA.97.033406
- Sitarek, J., Sobczynska, D., Adamczyk, K., Szanecki, M., & Bernlöhr, K. (2018). Estimation of the height of the first interaction in gamma-ray showers observed by Cherenkov telescopes. *Astroparticle Physics*, 103, 108–114. doi:10.1016/j.astropartphys.2018.07.008
- Smirnov, A., & Xu, X. (2018). Neutrino mixing in SO(10) GUTs with a non-Abelian flavor symmetry in the hidden sector. *Physical Review D*, 97(9), 095030. doi:10.1103/PhysRevD.97.095030
- Smorra, C., Blessing, P. E., Borchert, M. J., Devlin, J. A., Harrington, J., Higuchi, T., ... Ulmer, S. (2018). 350-fold improved measurement of the antiproton magnetic moment using a multi-trap method. *Hyperfine Interactions*, 239, 47. doi:10.1007/s10751-018-1507-1
- Stoß, V., Cavaletto, S., Donsa, S., Blättermann, A., Birk, P., Keitel, C. H., ... Pfeifer, T. (2018). Real-Time Reconstruction of the Strong-Field-Driven Dipole Response. *Physical Review Letters*, 121(17), 173005. doi:10.1103/PhysRevLett.121.173005
- Sun, X., Yang, R., Rieger, F. M., Liu, R., & Aharonian, F. (2018). Energy distribution of relativistic electrons in the kiloparsec scale jet of M 87 with Chandra. *Astronomy and Astrophysics Review*, 612, A106. doi:10.1051/0004-6361/201731716
- Takahashi, T., Kokubun, M., Mitsuda, K., Kelley, R. L., Ohashi, T., Aharonian, F., ... Zoghbi, A. (2018). Hitomi (ASTRO-H) X-ray Astronomy Satellite. *Journal of Astronomical Telescopes Instruments and Systems*, 4(2), 021402. doi:10.1117/1.JATIS.4.2.021402
- Tanaka, T., Yamaguchi, H., Wik, D. R., Aharonian, F. A., Bamba, A., Castro, D., ... Williams, B. J. (2018). NuSTAR Detection of Nonthermal Bremsstrahlung from the Supernova Remnant W49B. *Astrophysical Journal Letters*, 866(2), L26. doi:10.3847/2041-8213/aae709
- Tews, I., Huth, L., & Schwenk, A. (2018). Large-cutoff behavior of local chiral effective field theory interactions. *Physical Review C*, 98(02), 024401. doi:10.1103/PhysRevC.98.024001
- Tibaldo, L., Zanin, R., Faggioli, G., Ballet, J., Grondin, M.-H., Hinton, J. A., & Lemoine, M. (2018). Disentangling multiple high-energy emission components in the Vela X pulsar wind nebula with the Fermi Large Area Telescope. *Astronomy and Astrophysics*, 617, A78. doi:10.1051/0004-6361/201833356
- Tu, X. L., Chen, X.-C., Zhang, J.-T., Shuai, P., Yue, K., Xu, X., ... Xu, H.-S. (2018). First application of combined isochronous and Schottky mass spectrometry: Half-lives of fully-ionized  $^{49}\text{Cr}^{24+}$  and  $^{53}\text{Fe}^{26+}$  atoms. *Physical Review C*, 97(01), 014321. doi:10.1103/PhysRevC.97.014321

- Tzeferacos, P., Rigby, A., Bott, A. F.-A., Bell, A. R., Bingham, R., Casner, A., ... Gregori, G. (2018). Laboratory evidence of dynamo amplification of magnetic fields in a turbulent plasma. *Communications Physics*, 9, 591. doi:10.1038/s41467-018-02953-2
- Wang, E., Gong, M., Shen, Z., Shan, X., Ren, X., Dorn, A., & Chen, X. (2018). Fragmentation dynamics of CS<sub>2</sub> in collisions with 1.0 keV electrons. *The Journal of Chemical Physics*, 149(20), 204301. doi:10.1063/1.5059347
- Wang, G.-Y., & Liao, W.-T. (2018). Generation of Short Hard-X-Ray Pulses of Tailored Duration Using a Mössbauer Source. *Physical Review Applied*, 10(1), 014003. doi:10.1103/PhysRevApplied.10.014003
- Wang, J.-S., Liu, R.-Y., Aharonian, F., & Dai, Z.-G. (2018). Analytical treatment for the development of electromagnetic cascades in intense magnetic fields. *Physical Review D*, 97(10), 103016. doi:10.1103/PhysRevD.97.103016
- Wang, K., Liu, R.-Y., Dai, Z.-G., & Asano, K. (2018). Hadronic Origin of Prompt High-energy Emission of Gamma-ray Bursts Revisited: In the Case of a Limited Maximum Proton Energy. *Astrophysical Journal*, 857(1), 24. doi:10.3847/1538-4357/aab667
- Wang, L., Norberg, P., Brough, S., Brown I, M. J., da Cunha, E., Davies, L. J., ... Wright, A. H. (2018). Galaxy and Mass Assembly (GAMA): The environmental dependence of the galaxy main sequence. *Astronomy and Astrophysics*, 618, A1. doi:10.1051/0004-6361/201832697
- Wang, X., Xu, S., Ning, C., Al-Hagan, O., Hu, P., Zhao, Y., ... Madison, D. (2018). Dynamic effects in electron momentum spectroscopy of sulfur hexafluoride. *Physical Review A*, 97(6), 062704. doi:10.1103/PhysRevA.97.062704
- Werth, G., Sturm, S., & Blaum, K. (2018). Zeeman Spectroscopy in Penning Traps. *Advances in Atomic, Molecular, and Optical Physics*, 67, 257–296. doi:10.1016/bs.aamop.2018.02.004
- Wistisen, T. N., & Di Piazza, A. (2018). Impact of the quantized transverse motion on radiation emission in a Dirac harmonic oscillator. *Physical Review A*, 98(2), 022131. doi:10.1103/PhysRevA.98.022131
- Wistisen, T. N., Di Piazza, A., Knudsen, H. V., & Uggerhøj, U. I. (2018). Experimental evidence of quantum radiation reaction in aligned crystals. *Nature Communications*, 9, 795. doi:10.1038/s41467-018-03165-4
- Wu, Y., Gunst, J., Keitel, C. H., & Pálffy, A. (2018). Tailoring Laser-Generated Plasmas for Efficient Nuclear Excitation by Electron Capture. *Physical Review Letters*, 120(5), 052504. doi:10.1103/PhysRevLett.120.052504
- XENON Collaboration, Aprile, E., Aalbers, J., Agostini, F., Alfonsi, M., Althueser, L., ... Zhu, T. (2018). Dark Matter Search Results from a One Ton-Year Exposure of XENON1T. *Physical Review Letters*, 121(11), 111302. doi:10.1103/PhysRevLett.121.111302
- XENON Collaboration, Aprile, E., Aalbers, J., Agostini, F., Alfonsi, M., Amaro, F. D., ... Zhang, Y. (2018). Intrinsic backgrounds from Rn and Kr in the XENON100 experiment. *European Physical Journal C*, 78, 132. doi:10.1140/epjc/s10052-018-5565-y
- XENON Collaboration, Aprile, E., Aalbers, J., Agostini, F., Alfonsi, M., Amaro, F. D., ... Zhang, Y. (2018). Signal Yields of keV Electronic Recoils and Their Discrimination from Nuclear Recoils in Liquid Xenon. *Physical Review D*, 97(09), 092007. doi:10.1103/PhysRevD.97.092007

- Xi, S.-Q., Wang, X.-Y., Liang, Y.-F., Peng, F.-K., Yang, R.-Z., & Liu, R. (2018). Detection of gamma-ray emission from the Coma cluster with Fermi Large Area Telescope and tentative evidence for an extended spatial structure. *Physical Review D*, 98(6), 063006. doi:10.1103/PhysRevD.98.063006
- Xing, Y. M., Li, K. A., Zhang, Y. H., Zhou, X. H., Wang, M., Litvinov, Y. A., ... Xu, F. R. (2018). Mass measurements of neutron-deficient Y, Zr, and Nb isotopes and their impact on rp and vp nucleosynthesis processes. *Physics Letters B*, 781, 358–363. doi:10.1016/j.physletb.2018.04.009
- Xu, S., Guo, D., Ma, X., Zhu, X., Feng, W., Yan, S., ... Kryzhevoi V, N. (2018). Damaging Intermolecular Energy and Proton Transfer Processes in Alpha-Particle-Irradiated Hydrogen-Bonded Systems. *Angewandte Chemie International Edition in English*, 57(52), 17023–17027. doi:10.1002/anie.201808898
- Xu, Z. Y., Heylen, H., Asahi, K., Boulay, F., Daugas, J. M., de Groote, R. P., ... Yang, X. F. (2018). Nuclear moments of the low-lying isomeric  $1(+)$  state of Al-34: Investigation on the neutron  $1p1h$  excitation across  $N=20$  in the island of inversion. *Physics Letters B*, 782, 619–626. doi:10.1016/j.physletb.2018.06.009
- Yang, H., Gong, M., Dong, W., Shen, Z., Wang, E., & Chen, X. (2018). Two-body fragmentation of  $OCS_3^+$ : an ab initio molecular dynamics simulation study. *Journal of Physics B: Atomic, Molecular and Optical Physics*, 51(24), 245201. doi:10.1088/1361-6455/aaecfe
- Yang, H., Wang, E., Dong, W., Gong, M., Shen, Z., Tang, Y., ... Chen, X. (2018). Ultrafast fragmentation dynamics of triply charged carbon dioxide: Vibrational-mode-dependent molecular bond breakage. *Physical Review A*, 97(5), 052703. doi:10.1103/PhysRevA.97.052703
- Yang, R., de Ona Wilhelmi, E., & Aharonian, F. (2018). Diffuse gamma-ray emission in the vicinity of young star cluster Westerlund 2. *Astronomy and Astrophysics*, 611, A77. doi:10.1051/0004-6361/201732045
- Yang, R., Kafexhiu, E., & Aharonian, F. (2018). Exploring the shape of the gamma-ray spectrum around the “ $\pi(0)$ -bump.” *Astronomy and Astrophysics*, 615, A108. doi:10.1051/0004-6361/201730908
- Yang, X. F., Tsunoda, Y., Babcock, C., Billowes, J., Bissell, M. L., Blaum, K., ... Yordanov, D. T. (2018). Investigating the large deformation of the  $5/2^+$  isomeric state in  $^{73}\text{Zn}$ : An indicator for triaxiality. *Physical Review C*, 97(4), 044324. doi:10.1103/PhysRevC.97.044324
- Yordanov, D. T., Balabanski, D. L., Bissell, M. L., Blaum, K., Blazhev, A., Budinčević, I., ... Nörtershäuser, W. (2018). Spins and electromagnetic moments of  $^{101-109}\text{Cd}$ . *Physical Review C*, 98(1), 011303. doi:10.1103/PhysRevC.98.011303
- Zhang, Y. H., Zhang, P., Zhou, X. H., Wang, M., Litvinov, Y. A., Xu, H. S., ... Xu, F. R. (2018). Isochronous mass measurements of  $T_z = -1$  f p-shell nuclei from projectile fragmentation of  $^{58}\text{Ni}$ . *Physical Review C*, 98(1), 014319. doi:10.1103/PhysRevC.98.014319
- Zorn, J., White, R., Watson, J. J., Armstrong, T. P., Balzer, A., Barcelo, M., ... Zink, A. (2018). Characterisation and testing of CHEC-M-A camera prototype for the small-sized telescopes of the Cherenkov telescope array. *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, 904, 44–63. doi:10.1016/j.nima.2018.06.078

## Conference Papers 2018

Agostini, M., Bakalyarov, A. M., Balata, M., Barabanov, I., Baudis, L., Bauer, C., ... Zuzel, G. (2018). Searching Neutrinoless Double Beta Decay with Gerda Phase II. In *International Journal of Modern Physics-Conference Series* (Vol. 46). Beijing, PEOPLES R CHINA. doi:10.1142/S2010194518600406

Camus, N., Yakaboylu, E., Fechner, L., Klaiber, M., Laux, M., Mi, Y., ... Moshhammer, R. (2018). Experimental Evidence for Wigner's Tunneling Time. In *Journal of Physics Conference Series* (Vol. 999). Kazan E K Zavoisky Phys Tech Inst, Kazan, RUSSIA. doi:10.1088/1742-6596/999/1/012004

Harman, Z., Sikora, B., Yerokhin, V. A., Cakir, H., Debierre, V., Michel, N., ... Keitel, C. H. (2018). The g factor of highly charged ions. In *Journal of Physics: Conference Series* (Vol. 1138). Bristol: IOP Publishing. doi:10.1088/1742-6596/1138/1/012002

Le Blanc, O., Fasola, G., Huet, J. M., White, R., Dmytriiev, A., Sol, H., ... Zorn, J. (2018). Final characterisation and design of the Gamma-ray Cherenkov Telescope (GCT) for the Cherenkov Telescope Array. In *Ground-based and Airborne Telescopes VII*. Austin, TX. doi:10.1117/12.2313158

Minkov, N., & Pálffy, A. (2018). Electromagnetic Properties of the  $^{229m}\text{Th}$  Isomer. In *Nuclear Theory* (Vol. 37, pp. 33–39). Rila Mountains, Bulgaria.

Oya, I., Fuessling, M., Hinton, J. A., Mitchell, A., Tosti, G., & Dazzi, F. (2018). Deriving generic telescope use cases for the Cherenkov Telescope Array (Vol. 10705). Presented at the Conference on Modeling, Systems Engineering, and Project Management for Astronomy VIII, Austin, TX.

Smirnov, A. Y. (2018). Solar Neutrinos and Matter Effects. In *The State of the Art of Neutrino Physics ; A Tutorial for Graduate Students and Young Researchers* (pp. 149–209)

## Books and Book Chapters 2018

Lindner, M., Platscher, M., & Queiroz, F. (2018). A Call for New Physics : The Muon Anomalous Magnetic Moment and Lepton Flavor Violation. *Physics Reports: Review Section of Physics Letters* (Vol. 731). Amsterdam: North-Holland. doi:10.1016/j.physrep.2017.12.001



# Publications 2019

## Journals Articles

- Abada, A., Abbrescia, M., AbdusSalam, S. S., Abdyukhanov, I., Fernandez, J. A., Abramov, A., ... Zurita, J. (2019). FCC Physics Opportunities: Future Circular Collider Conceptual Design Report Volume 1. *European Physical Journal C*, 79(6), 474. doi:10.1140/epjc/s10052-019-6904-3
- Abada, A., Arcadi, G., Domcke, V., Drewes, M., Klaric, J., & Lucente, M. (2019). Low-scale leptogenesis with three heavy neutrinos. *Journal of High Energy Physics : JHEP*, 2019(01), 164. doi:10.1007/JHEP01(2019)164
- Abdalla, H., Adam, R., Aharonian, F., Ait Benkhali, F., Angüner, E. O., Arakawa, M., ... Roberts, O. J. (2019). Resolving the Crab pulsar wind nebula at teraelectronvolt energies. *Nature Astronomy*, 3. doi:10.1038/s41550-019-0910-0
- Abdalla, H., Adam, R., Aharonian, F., Ait Benkhali, F., Angüner, E. O., Arakawa, M., ... Roberts, O. J. (2019). A very-high-energy component deep in the  $\gamma$ -ray burst afterglow. *Nature*, 575, 464–467. doi:10.1038/s41586-019-1743-9
- Abdalla, H., Aharonian, F., Ait Benkhali, F., Anguener, E. O., Arakawa, M., Arcaro, C., ... Maxted I, N. (2019). Upper limits on very-high-energy gamma-ray emission from core-collapse supernovae observed with HESS. *Astronomy and Astrophysics*, 626, A57. doi:10.1051/0004-6361/201935242
- Abdalla, H., Aharonian, F., Ait Benkhali, F., Anguner, E. O., Arakawa, M., Arcaro, C., ... Zywucka, N. (2019). HESS observations of the flaring gravitationally lensed galaxy PKS 1830-211. *Monthly Notices of the Royal Astronomical Society*, 486(3), 3886–3891. doi:10.1093/mnras/stz1031
- Abdalla, H., Aharonian, F., Ait Benkhali, F., Anguner, E. O., Arakawa, M., Arcaro, C., ... Zywucka, N. (2019). HESS and Suzaku observations of the Vela X pulsar wind nebula. *Astronomy and Astrophysics*, 627, A100. doi:10.1051/0004-6361/201935458
- Abeysekara, A. U., Alfaro, R., Alvarez, C., Arceo, R., Arteaga-Velazquez, J. C., Avila Rojas, D., ... Yuan, T. (2019). All-sky Measurement of the Anisotropy of Cosmic Rays at 10 TeV and Mapping of the Local Interstellar Magnetic Field. *Astrophysical Journal*, 871(1), 96. doi:10.3847/1538-4357/aaf5cc
- Ablikim, U., Bomme, C., Osipov, T., Xiong, H., Obaid, R., Bilodeau, R. C., ... Rolles, D. (2019). A coincidence velocity map imaging spectrometer for ions and high-energy electrons to study inner-shell photo ionization of gas-phase molecules. *Review of Scientific Instruments*, 90(5), 055103. doi:10.1063/1.5093420
- Acharyya, A., Agudo, I., Angüner, E. O., Alfaro, R., Alfaro, J., Alispach, C., ... Zorn, J. (2019). Monte Carlo studies for the optimisation of the Cherenkov Telescope Array layout. *Astroparticle Physics*, 111, 35–53. doi:10.1016/j.astropartphys.2019.04.001
- Aharonian, F., Yang, R., & Wilhelmi, E. de O. (2019). Massive stars as major factories of Galactic cosmic rays. *Nature Astronomy*, 3(6), 561–567. doi:10.1038/s41550-019-0724-0
- Ahnen, M. L., Ansoldi, S., Antonelli, L. A., Arcaro, C., Baack, D., Babic, A., ... Yassine, M. (2019). MAGIC and Fermi-LAT gamma-ray results on unassociated HAWC sources. *Monthly Notices of the Royal Astronomical Society*, 485(1), 356–366. doi:10.1093/mnras/stz089
- Ait Benkhali, F., Chakraborty, N., & Rieger, F. M. (2019). Complex gamma-ray behavior of the radio galaxy

M 87. *Astronomy and Astrophysics*, 623, A2. doi:10.1051/0004-6361/201732334

Alanne, T., Blasi, S., & Dondi, N. A. (2019). Critical Look at  $\beta$ -Function Singularities at Large N. *Physical Review Letters*, 123(13), 131602. doi:10.1103/PhysRevLett.123.131602

Alanne, T., Blasi, S., & Dondi, N. A. (2019). Bubble-resummation and critical-point methods for  $\beta$ -functions at large N. *The European Physical Journal C: Particles and Fields*, 79(8), 689. doi:10.1140/epjc/s10052-019-7190-9

Alanne, T., Blasi, S., & Goertz, F. (2019). Common source for scalars: Flavored axion-Higgs unification. *Physical Review D*, 99(01), 015028. doi:10.1103/PhysRevD.99.015028

Alanne, T., Heikinheimo, M., Keus, V., Koivunen, N., & Tuominen, K. (2019). Direct and indirect probes of Goldstone dark matter. *Physical Review D*, 99(7), 075028. doi:10.1103/PhysRevD.99.075028

Alanne, T., Hugle, T., Platscher, M., & Schmitz, K. (2019). Low-scale leptogenesis assisted by a real scalar singlet. *Journal of Cosmology and Astroparticle Physics*, 2019(03), 037. doi:10.1088/1475-7516/2019/03/037

Almazán, H., Bernard, L., Blanchet, A., Bonhomme, A., Buck, C., Chebboubi, A., ... Vialat, M. (2019). Improved STEREO simulation with a new gamma ray spectrum of excited gadolinium isotopes using FIFRELIN. *European Physical Journal A*, 55, 183. doi:10.1140/epja/i2019-12886-y

Altenmüller, K., Arenz, M., Baek, W.-J., Beck, M., Beglarian, A., Behrens, J., ... Zeller, G. (2019). Muon-induced background in the KATRIN main spectrometer. *Astroparticle Physics*, 108, 40–49. doi:10.1016/j.astropartphys.2019.01.003

Altenmüller, K., Arenz, M., Baek, W.-J., Beck, M., Beglarian, A., Behrens, J., ... Zeller, G. (2019). Gamma-induced background in the KATRIN main spectrometer. *European Physical Journal C*, 79, 807. doi:10.1140/epjc/s10052-019-7320-4

Ambrogio, L., Zanin, R., Casanova, S., De Ona Wilhelmi, E., Peron, G., & Aharonian, F. (2019). Spectral and morphological study of the gamma radiation of the middle-aged supernova remnant HB 21. *Astronomy and Astrophysics*, 623, A86. doi:10.1051/0004-6361/201833985

Amini, K., Sclafani, M., Steinle, T., Le, A.-T., Sanchez, A., Müller, C., ... Biegert, J. (2019). Imaging the Renner-Teller effect using laser-induced electron diffraction. *Proceedings of the National Academy of Sciences of the United States of America*, 116(17), 8173–8177. doi:10.1073/pnas.1817465116

Amsler, C., Antonello, M., Belov, A., Bonomi, G., Brusa, R. S., Caccia, M., ... Zurlo, N. (2019). A similar to  $\sim 100$   $\mu\text{m}$ -resolution position-sensitive detector for slow positronium. *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms*, 457, 44–48. doi:10.1016/j.nimb.2019.07.015

Amsler, C., Antonello, M., Belov, A., Bonomi, G., Brusa, R. S., Caccia, M., ... Zurlo, N. (2019). Velocity-selected production of  $^{23}\text{S}$  metastable positronium. *Physical Review A*, 99(3), 033405. doi:10.1103/PhysRevA.99.033405

Angioi, A., & Di Piazza, A. (2019). On quantum electrodynamic processes in plasmas interacting with strong lasers. *Rendiconti Lincei*, 30(1), 17–23. doi:10.1007/s12210-019-00774-z

Aprile, E., Aalbers, J., Agostini, F., Alfonsi, M., Althueser, L., Amaro, F. D., ... Schwenk, A. (2019). First results on the scalar WIMP-pion coupling, using the XENON1T experiment. *Physical Review Letters*,

122(7), 071301. doi:10.1103/PhysRevLett.122.071301

Arapoglou, I., Egl, A., Höcker, M., Sailer, T., Tu, B., Weigel, A., ... Blaum, K. (2019). g Factor of Boronlike Argon  $^{40}\text{Ar}^{13+}$ . *Physical Review Letters*, 122(25), 253001. doi:10.1103/PhysRevLett.122.253001

Araya, M., Mitchell, A. M. W., & Parsons, R. D. (2019). Revealing a new region of gamma-ray emission in the vicinity of HESS J1825-137. *Monthly Notices of the Royal Astronomical Society*, 485(1), 1001–1007. doi:10.1093/mnras/stz462

Arcadi, G., Heeck, J., Heizmann, F., Mertens, S., Queiroz, F. S., Rodejohann, W., ... Valerius, K. (2019). Tritium beta decay with additional emission of new light bosons. *Journal of High Energy Physics : JHEP*, 2019(01), 206. doi:10.1007/JHEP01(2019)206

Arcadi, G., Lebedev, O., Pokorski, S., & Toma, T. (2019). Real Scalar Dark Matter: Relativistic Treatment. *Journal of High Energy Physics : JHEP*, 2019(08), 050. doi:10.1007/JHEP08(2019)050

Ascher, P., Althubiti, N., Atanasov, D., Blaum, K., Cakirli, R. B., Grévy, S., ... Zuber, K. (2019). Mass measurements of neutron-rich isotopes near  $N = 20$  by in-trap decay with the ISOLTRAP spectrometer. *Physical Review C*, 100(1), 014304. doi:10.1103/PhysRevC.100.014304

Aumayr, F., Ueda, K., Sokell, E., Schippers, S., Sadeghpour, H., Merkt, F., ... Stoehlker, T. (2019). Roadmap on photonic, electronic and atomic collision physics: III. Heavy particles: with zero to relativistic speeds. *Journal of Physics B: Atomic, Molecular and Optical Physics*, 52(17), 171003. doi:10.1088/1361-6455/ab26ea

Barzakh, A. E., Cubiss, J. G., Andreyev, A. N., Seliverstov, M. D., Andel, B., Antalic, S., ... Zuber, K. (2019). Inverse odd-even staggering in nuclear charge radii and possible octupole collectivity in  $^{217,218,219}\text{At}$  revealed by in-source laser spectroscopy. *Physical Review C*, 99, 054317. doi:10.1103/PhysRevC.99.054317

Baur, A., Nilles, H. P., Trautner, A., & Vaudrevange, P. K. S. (2019). A string theory of flavor and CP. *Nuclear Physics B*, 947, UNSP 114737. doi:10.1016/j.nuclphysb.2019.114737

Bekker, H., Borschevsky, A., Harman, Z., Keitel, C. H., Pfeifer, T., Schmidt, P. O., ... Berengut, J. C. (2019). Detection of the 5p-4f orbital crossing and its optical clock transition in  $\text{Pr}^{9+}$ . *Nature Communications*, 10, 5651. doi:10.1038/s41467-019-13406-9

Bell, N. F., Busoni, G., & Robles, S. (2019). Capture of leptophilic dark matter in neutron stars. *Journal of Cosmology and Astroparticle Physics*, 2019(6), 054. doi:10.1088/1475-7516/2019/06/054

Ben Ltaief, L., Shcherbinin, M., Mandal, S., Krishnan, S. R., LaForge, A. C., Richter, R., ... Mudrich, M. (2019). Charge Exchange Dominates Long-Range Interatomic Coulombic Decay of Excited Metal-Doped Helium Nanodroplets. *The Journal of Physical Chemistry Letters*, 10(21), 6904–6909. doi:10.1021/acs.jpcclett.9b02726

Bergmann, K., Nägerl, H.-C., Panda, C., Gabrielse, G., Miloglyadov, E., Quack, M., ... Keitel, C. H. (2019). Roadmap on STIRAP applications. *Journal of Physics B: Atomic, Molecular and Optical Physics*, 52, 202001. Retrieved from <http://hdl.handle.net/21.11116/0000-0004-F1B3-1>

Berrah, N., Sanchez-Gonzalez, A., Jurek, Z., Obaid, R., Xiong, H., Squibb, R. J., ... Santra, R. (2019). Femtosecond-resolved observation of the fragmentation of buckminsterfullerene following X-ray multiphoton ionization. *Nature Physics*, 15, 1279–1283. doi:10.1038/s41567-019-0665-7

Berryman, J. M., Brdar, V., & Huber, P. (2019). Particle physics origin of the 5 MeV bump in the reactor

- antineutrino spectrum? *Physical Review D*, 99(5), 055045. doi:10.1103/PhysRevD.99.055045
- Bhadoria, S., & Kumar, N. (2019). Collisionless shock acceleration of quasimonoenergetic ions in ultrarelativistic regime. *Physical Review E*, 99(4), 043205. doi:10.1103/PhysRevE.99.043205
- Biondini, S., & Vogl, S. (2019). Coloured coannihilations: dark matter phenomenology meets non-relativistic EFTs. *Journal of High Energy Physics : JHEP*, 2019(02), 016. doi:10.1007/JHEP02(2019)016
- Bischer, I., Grandou, T., & Hofmann, R. (2019). Perturbative Peculiarities of Quantum Field Theories at High Temperatures. *Universe*, 5(3), 81. doi:10.3390/universe5030081
- Bischer, I., Grandou, T., & Hofmann, R. (2019). On Quantum Fields at High Temperature. *Universe*, 5(1), 26. doi:10.3390/universe5010026
- Bischer, I., & Rodejohann, W. (2019). General neutrino interactions at the DUNE near detector. *Physical Review D*, 99(3), 036006. doi:10.1103/PhysRevD.99.036006
- Bischer, I., & Rodejohann, W. (2019). General neutrino interactions from an effective field theory perspective. *Nuclear Physics B*, 947, UNSP 114746. doi:10.1016/j.nuclphysb.2019.114746
- Blasi, S., & Goertz, F. (2019). Softened Symmetry Breaking in Composite Higgs Models. *Physical Review Letters*, 123(22), 221801. doi:10.1103/PhysRevLett.123.221801
- Blaum, K., & Bock, M. (2019). Aus Hahnium wurde Dubnium. *Physik in Unserer Zeit*, 50(4), 204–204. doi:10.1002/piuz.201970413
- Blaum, K., Budker, D., Surzhykov, A., & Ullrich, J. (2019). The Revised SI: Fundamental Constants, Basic Physics and Units. *Annalen Der Physik*, 531(5), 1900148. doi:10.1002/andp.201900148
- Bolognesi, P., Carravetta, V., Sementa, L., Barcaro, G., Monti, S., Mishra, P. M., ... Avaldi, L. (2019). Core Shell Investigation of 2-nitroimidazole. *Frontiers in Chemistry*, 7, 151. doi:10.3389/fchem.2019.00151
- Borchert, M. J., Blessing, P. E., Devlin, J. A., Harrington, J., Higuchi, T., Morgner, J., ... Ulmer, S. (2019). Measurement of Ultralow Heating Rates of a Single Antiproton in a Cryogenic Penning Trap. *Physical Review Letters*, 122(04), 043201. doi:10.1103/PhysRevLett.122.043201
- Böser, S., Buck, C., Giunti, C., Lesgourgues, J., Ludhova, L., Mertens, S., ... Wurm, M. (2019). Status of Light Sterile Neutrino Searches. *Progress in Particle and Nuclear Physics*, in press. doi:10.1016/j.pnpnp.2019.103736
- Brdar, V., Emonds, Y., Helmboldt, A., & Lindner, M. (2019). Conformal realization of the neutrino option. *Physical Review D*, 99(5), 055014. doi:10.1103/PhysRevD.99.055014
- Brdar, V., & Hansen, R. S. L. (2019). IceCube flavor ratios with identified astrophysical sources: towards improving new physics testability. *Journal of Cosmology and Astroparticle Physics*, 2019(2), 023. doi:10.1088/1475-7516/2019/02/023
- Brdar, V., Helmboldt, A., Iwamoto, S., & Schmitz, K. (2019). Type I seesaw mechanism as the common origin of neutrino mass, baryon asymmetry, and the electroweak scale. *Physical Review D*, 100(7), 075029. doi:10.1103/PhysRevD.100.075029
- Brdar, V., Helmboldt, A., & Kubo, J. (2019). Gravitational waves from first-order phase transitions: LIGO as a window to unexplored seesaw scales. *Journal of Cosmology and Astroparticle Physics*, 2019(2), 021.

doi:10.1088/1475-7516/2019/02/021

Brdar, V., & Smirnov, A. (2019). Low Scale Left-Right Symmetry and Naturally Small Neutrino Mass. *Journal of High Energy Physics : JHEP*, 2019(02), 045. doi:10.1007/JHEP02(2019)045

Buck, C., Gramlich, B., Lindner, M., Roca Catala, C., & Schoppmann, S. (2019). Production and Properties of the Liquid Scintillators used in the Stereo Reactor Neutrino Experiment. *Journal of Instrumentation*, 14, P01027. doi:10.1088/1748-0221/14/01/P01027

Buck, C., Gramlich, B., & Schoppmann, S. (2019). Novel Opaque Scintillator for Neutrino Detection. *Journal of Instrumentation*, 14, P11007. doi:10.1088/1748-0221/14/11/P11007

Bykov, D. S., Mestres, P., Dania, L., Schmoeger, L., & Northup, T. E. (2019). Direct loading of nanoparticles under high vacuum into a Paul trap for levitodynamical experiments. *Applied Physics Letters*, 115(3), 034101. doi:10.1063/1.5109645

Camargo, D. A., Campos, M., de Melo, T. B., & Queiroz, F. S. (2019). A two Higgs doublet model for dark matter and neutrino masses. *Physics Letters B*, 795, 319–326. doi:10.1016/j.physletb.2019.06.020

Camper, A., Aghion, S., Amsler, C., Antonello, M., Belov, A., Bonomi, G., ... Zurlo, N. (2019). Imaging a positronium cloud in a 1 Tesla. *EPJ Web of Conferences*, 198, 00004. doi:10.1051/epjconf/201919800004

Caravita, R., Aghion, S., Amsler, C., Antonello, M., Belov, A., Bonomi, G., ... Zurlo, N. (2019). The AEGIS experiment at CERN: Probing antimatter gravity. *Nuovo Cimento C - Colloquia and Communications in Physics*, 42(2-3), 123. doi:10.1393/ncc/i2019-19123-9

Carbone, A., & Schwenk, A. (2019). Ab initio constraints on thermal effects of the nuclear equation of state. *Physical Review C*, 100(2), 025805. doi:10.1103/PhysRevC.100.025805

Carcamo Hernandez, A. E., Marchant Gonzalez, J., & Saldana Salazar, U. J. (2019). Viable low-scale model with universal and inverse seesaw mechanisms. *Physical Review D*, 100(3), 035024. doi:10.1103/PhysRevD.100.035024

Carpeggiani, P., Reduzzi, M., Comby, A., Ahmadi, H., Kühn, S., Calegari, F., ... Sansone, G. (2019). Erratum: Corrigendum: Vectorial optical field reconstruction by attosecond spatial interferometry. *Nature Photonics*, 11, 527. doi:10.1038/nphoton.2017.123

Castrignano, S., & Evers, J. (2019). Probing Quantum Dynamical Couple Correlations with Time-Domain Interferometry. *Physical Review Letters*, 122(2), 025301. doi:10.1103/PhysRevLett.122.025301

Celli, S., Morlino, G., Gabici, S., & Aharonian, F. A. (2019). Supernova remnants in clumpy media: particle propagation and gamma-ray emission. *Monthly Notices of the Royal Astronomical Society*, 487(3), 3199–3213. doi:10.1093/mnras/stz1425

Cerchiari, G., Erlewein, S., Yzombard, P., Zimmermann, M., & Kellerbauer, A. (2019). Capture of an external anion beam into a linear Paul trap. *Journal of Physics B: Atomic, Molecular and Optical Physics*, 52(15), 155003. doi:10.1088/1361-6455/ab0089

Cerchiari, G., Yzombard, P., & Kellerbauer, A. (2019). Laser-Assisted Evaporative Cooling of Anions. *Physical Review Letters*, 123(10), 103201. doi:10.1103/PhysRevLett.123.103201

Chen, N., Du, C., Wu, Y., & Xu, X. (2019). Further study of the global minimum constraint on the two-Higgs-doublet models: LHC searches for heavy Higgs bosons. *Physical Review D*, 99(3), 035011.

doi:10.1103/PhysRevD.99.035011

Chen, X. C., Litvinov, Y. A., Wang, M., Wang, Q., & Zhang, Y. H. (2019). Denoising scheme based on singular-value decomposition for one-dimensional spectra and its application in precision storage-ring mass spectrometry. *Physical Review E*, 99(6), 063320. doi:10.1103/PhysRevE.99.063320

Chen, Y.-Y., Hatsagortsyan, K. Z., & Keitel, C. H. (2019). Generation of twisted  $\gamma$ -ray radiation by nonlinear Thomson scattering of twisted light. *Matter and Radiation at Extremes*, 4, 024401. doi:10.1063/1.5086347

Chen, Y.-Y., He, P.-L., Shaisultanov, R., Hatsagortsyan, K. Z., & Keitel, C. H. (2019). Polarized Positron Beams via Intense Two-Color Laser Pulses. *Physical Review Letters*, 123(17), 174801. doi:10.1103/PhysRevLett.123.174801

Coello Pérez, E. A., Menéndez, J., & Schwenk, A. (2019). Two-neutrino double electron capture on  $^{124}\text{Xe}$  based on an effective theory and the nuclear shell model. *Physics Letters B*, 797, 134885. doi:10.1016/j.physletb.2019.134885

Coleman, J., Danilov, M., Gratta, G., Heeger, K., Huber, P., Hor, Y., ... Zhan, L. (2019). Neutrino-Based Tools for Nuclear Verification and Diplomacy in North Korea. *Science & Global Security*, 27(1), 15–28. doi:10.1080/08929882.2019.1603007

Collaboration, H. E. S. S., Abdalla, H., Adam, R., Aharonian, F., Ait Benkhali, F., Angüner, E. O., ... Meyer, M. (2019). The 2014 TeV  $\gamma$ -Ray Flare of Mrk 501 Seen with H.E.S.S.: Temporal and Spectral Constraints on Lorentz Invariance Violation. *Astrophysical Journal*, 870(2), 93. doi:10.3847/1538-4357/aaf1c4

Collaboration, H. E. S. S., Abdalla, H., Adam, R., Aharonian, F., Ait Benkhali, F., Angüner, E. O., ... Meyer, M. (2019). H.E.S.S. observations of the flaring gravitationally lensed galaxy PKS 1830–211. *Monthly Notices of the Royal Astronomical Society*, 486(3), 3886–3891. doi:10.1093/mnras/stz1031

Collaboration, H. E. S. S., Abdalla, H., Adam, R., Aharonian, F., Ait Benkhali, F., Angüner, E. O., ... Meyer, M. (2019). Upper limits on very-high-energy gamma-ray emission from core-collapse supernovae observed with H.E.S.S. *Astronomy and Astrophysics*, 626, A57. doi:10.1051/0004-6361/201935242

Collaboration, H. E. S. S., Abdalla, H., Adam, R., Aharonian, F., Ait Benkhali, F., Angüner, E. O., ... Meyer, M. (2019). Particle transport within the pulsar wind nebula HESS J1825–137. *Astronomy and Astrophysics*, 621, A116. doi:10.1051/0004-6361/201935242

Collaboration, H. E. S. S., Abdalla, H., Adam, R., Aharonian, F., Ait Benkhali, F., Angüner, E. O., ... Meyer, M. (2019). H.E.S.S. and Suzaku observations of the Vela X pulsar wind nebula. *Astronomy and Astrophysics*, 627, A100. doi:10.1051/0004-6361/201935458

Collaboration, H. E. S. S., Abdalla, H., Adam, R., Aharonian, F., Ait Benkhali, F., Angüner, E. O., ... Meyer, M. (2019). Constraints on the emission region of 3C 279 during strong flares in 2014 and 2015 through VHE gamma-ray observations with H.E.S.S. *Astronomy and Astrophysics*, 627, A159. doi:10.1051/0004-6361/201935704

Collaboration, H. E. S. S., Abdalla, H., Aharonian, F., Ait Benkhali, F., Angüner, E. O., Arakawa, M., ... Żywucka, N. (2019). Resolving the Crab pulsar wind nebula at teraelectronvolt energies. *Nature Astronomy*. doi:10.1038/s41550-019-0910-0

Cremonesi, L., Connolly, A., Allison, P., Banerjee, O., Batten, L., Beatty, J. J., ... Wissel, S. A. (2019). The simulation of the sensitivity of the Antarctic Impulsive Transient Antenna (ANITA) to Askaryan radia-

tion from cosmogenic neutrinos interacting in the Antarctic Ice. *Journal of Instrumentation*, 14, P08011. doi:10.1088/1748-0221/14/08/P08011

Croon, D., Gonzalo, T. E., Graf, L., Košnik, N., & White, G. (2019). GUT Physics in the era of the LHC. *Frontiers of Physics*, 7, 76. doi:10.3389/fphy.2019.00076

Dal Bello, R., Martins, P. M., Graca, J., Hermann, G., Kihm, T., & Seco, J. (2019). Results from the experimental evaluation of CeBr<sub>3</sub> scintillators for <sup>4</sup>He prompt gamma spectroscopy. *Medical Physics*, 46(8), 3615–3626. doi:10.1002/mp.13594

Debierre, V. (2019). Lorentz Generators for the Maxwell Field and Gauge Fixing. *Communications in Theoretical Physics*, 71(4), 403–409. doi:10.1088/0253-6102/71/4/403

Dembinski, H. P., Schmelling, M., & Waldi, R. (2019). Application of the Iterated Weighted Least-Squares Fit to counting experiments. *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, 940, 135–141. doi:10.1016/j.nima.2019.05.086

Dev, B., Mohapatra, R. N., Rodejohann, W., & Xu, X. (2019). Vacuum structure of the left-right symmetric model. *Journal of High Energy Physics : JHEP*, 2019(02), 154. doi:10.1007/JHEP02(2019)154

Devlin, J. A., Wursten, E., Harrington, J. A., Higuchi, T., Blessing, P. E., Borchert, M. J., ... Ulmer, S. (2019). Superconducting Solenoid System with Adjustable Shielding Factor for Precision Measurements of the Properties of the Antiproton. *Physical Review Applied*, 12(4), 044012. doi:10.1103/PhysRevApplied.12.044012

Di Piazza, A., Tamburini, M., Meuren, S., & Keitel, C. H. (2019). Improved local-constant-field approximation for strong-field QED codes. *Physical Review A*, 99(2), 022125. doi:10.1103/PhysRevA.99.022125

Ding, T., Rebholz, M., Aufleger, L., Hartmann, M., Meyer, K., Stooß, V., ... Pfeifer, T. (2019). Nonlinear Coherence Effects in Transient-Absorption Ion Spectroscopy with Stochastic Extreme-Ultraviolet Free-Electron Laser Pulses. *Physical Review Letters*, 123(10), 103001. doi:10.1103/PhysRevLett.123.103001

Dolinski, M. J., Poon, A. W. P., & Rodejohann, W. (2019). Neutrinoless Double-Beta Decay: Status and Prospects. *Annual Review of Nuclear and Particle Science*, 69, 219–251. doi:10.1146/annurev-nucl-101918-023407

Döring, C., Hansen, R., & Lindner, M. (2019). Stability of three neutrino flavor conversion in supernovae. *Journal of Cosmology and Astroparticle Physics*, 2019(08), 003. doi:10.1088/1475-7516/2019/08/003

Dorn, A., Weyland, M., & Ren, X. (2019). Electron-ion momentum vector coincidences in electron collisions with atoms and molecules. *Journal of Electron Spectroscopy and Related Phenomena*, 230, 33–39. doi:10.1016/j.elspec.2017.09.007

Drischler, C., Hebeler, K., & Schwenk, A. (2019). Chiral interactions up to next-to-next-to-next-to-leading order and nuclear saturation. *Physical Review Letters*, 122(04), 042501. doi:10.1103/PhysRevLett.122.042501

Egl, A., Arapoglou, I., Höcker, M., König, K., Ratajczyk, T., Sailer, T., ... Sturm, S. (2019). Application of the Continuous Stern-Gerlach Effect for Laser Spectroscopy of the <sup>40</sup>Ar<sup>13+</sup> Fine Structure in a Penning Trap. *Physical Review Letters*, 123(12), 123001. doi:10.1103/PhysRevLett.123.123001

Fink, D., Blaum, K., Fedosseev, V. N., Marsh, B. A., Rossel, R. E., & Rothe, S. (2019). Determination of the first ionization energy of polonium by resonance ionization spectroscopy – Part II: Measurement of odd-

parity Rydberg states at CERN-ISOLDE. *Spectrochimica Acta Part B: Atomic Spectroscopy*, 151, 72–82. doi:10.1016/j.sab.2018.08.004

Frömmgen, N., Nörtershäuser, W., Bissell, M. L., Blaum, K., Geppert, C., Hammen, M., ... Yordanov, D. T. (2019). Hyperfine structure and nuclear magnetic moments of the praseodymium isotopes  $^{135}\text{Pr}$ ,  $^{136}\text{Pr}$ ,  $^{137}\text{Pr}$ . *Hyperfine Interactions*, 240, 66. doi:10.1007/s10751-019-1608-5

Funk, S., & Hinton, J. A. (2019). The first Cherenkov Telescope Array Science Symposium. *Nature Astronomy*, 3, 592–593. doi:10.1038/s41550-019-0830-z

Gandolfi, S., Hammer, H.-W., Klos, P., Lynn, J. E., & Schwenk, A. (2019). Reply to Comment on “Is a Trineutron Resonance Lower in Energy than a Tetraneutron Resonance?” *Physical Review Letters*, 123(6), 069202. doi:10.1103/PhysRevLett.123.069202

GERDA collaboration, Agostini, M., Bakalyarov, A. M., Andreotti, E., Balata, M., Barabanov, I., ... Zuzel, G. (2019). Characterization of  $^{30}\text{Ge}$  enriched Broad Energy Ge detectors for GERDA Phase II. *European Physical Journal C*, 79, 978. doi:10.1140/epjc/s10052-019-7353-8

GERDA collaboration, Agostini, M., Bakalyarov, A. M., Balata, M., Barabanov, I., Baudis, L., Bauer, C., ... Zuzel, G. (2019). Probing Majorana neutrinos with double- $\beta$  decay. *Science*, 365(6460), 1445–1448. doi:10.1126/science.aav8613

Giacinti, G., & Kirk, J. G. (2019). TeV-PeV Cosmic-Ray Anisotropy and Local Interstellar Turbulence. *Journal of Physics: Conference Series*, 1181, 012035. doi:10.1088/1742-6596/1181/1/012035

Giacinti, G., & López-Coto, R. (2019). Constraints on the properties of the turbulent magnetic field around Geminga using HAWC measurements. *Journal of Physics: Conference Series*, 1181, 012046. doi:10.1088/1742-6596/1181/1/012046

Ginsburg, A., Sipocz, B. M., Brasseur, C. E., Cowperthwaite, P. S., Craig, M. W., Deil, C., ... Woillez, J. (2019). astroquery: An Astronomical Web-querying Package in Python. *Astronomical Journal*, 157(3), 98. doi:10.3847/1538-3881/aafc33

Glazov, D. A., Köhler-Langes, F., Volotka, A. V., Blaum, K., Heiße, F., Plunien, G., ... Werth, G. (2019).  $g$  Factor of Lithiumlike Silicon: New Challenge to Bound-State QED. *Physical Review Letters*, 123(17), 173001. doi:10.1103/PhysRevLett.123.173001

Glorius, J., Langer, C., Slavkovská, Z., Bott, L., Brandau, C., Bückner, B., ... Xing, Y. M. (2019). Approaching the Gamow window with stored ions: Direct measurement of  $^{124}\text{Xe}(p, \gamma)$  in the ESR storage ring. *Physical Review Letters*, 122(09), 092701. doi:10.1103/PhysRevLett.122.092701

Goerttler, S., Heeg, K. P., Kaldun, A., Reiser, P., Strohm, C., Haber, J., ... Pfeifer, T. (2019). Time-Resolved sub-Ångström Metrology by Temporal Phase Interferometry near X-Ray Resonances of Nuclei. *Physical Review Letters*, 123(15), 153902. doi:10.1103/PhysRevLett.123.153902

Goertz, F. (2019). Indirect estimation of masses beyond collider reach in EFT. *Journal of High Energy Physics : JHEP*, 2019(5), 090. doi:10.1007/JHEP05(2019)090

Goertz, F., Tame Narvaez, K., & Tenorth, V. (2019). Di-jet/ $e^+e^-$  + MET to probe Z2-odd mediators to the dark sector. *European Physical Journal C*, 79, 860. doi:10.1140/epjc/s10052-019-7374-3

Gorges, C., Rodríguez, L. V., Balabanski, D. L., Bissell, M. L., Blaum, K., Cheal, B., ... Yordanov, D. T. (2019). Laser Spectroscopy of Neutron-Rich Tin Isotopes: A Discontinuity in Charge Radii across the  $N =$



82 Shell Closure. *Physical Review Letters*, 122(19), 192502. doi:10.1103/PhysRevLett.122.192502

Greif, S. K., Raaijmakers, G., Hebeler, K., Schwenk, A., & Watts, A. L. (2019). Equation of state sensitivities when inferring neutron star and dense matter properties. *Monthly Notices of the Royal Astronomical Society*, 485(4), 5363–5376. doi:10.1093/mnras/stz654

Grün, E., Krueger, H., & Srama, R. (2019). The Dawn of Dust Astronomy. *Space Science Reviews*, 215(7), UNSP 46. doi:10.1007/s11214-019-0610-1

Gu, L., Raassen, A. J. J., Mao, J., de Plaa, J., Shah, C., Pinto, C., ... Kaastra, J. S. (2019). X-ray spectra of the Fe-L complex. *Astronomy and Astrophysics*, 627, A51. doi:10.1051/0004-6361/201833860

Gysbers, P., Hagen, G., Holt, J. D., Jansen, G. R., Morris, T. D., Navratil, P., ... Wendt, K. A. (2019). Discrepancy between experimental and theoretical  $\beta$ -decay rates resolved from first principles. *Nature Physics*, 15, 428–431. doi:10.1038/s41567-019-0450-7

Hakenmüller, J., Buck, C., Fülber, K., Heusser, G., Klages, T., Lindner, M., ... Zimbal, A. (2019). Neutron-induced background in the CONUS experiment. *European Physical Journal C*, 79, 699. doi:10.1140/epjc/s10052-019-7160-2

Hansen, R., & Smirnov, A. Y. (2019). Effect of extended neutrino production region on collective oscillations in supernovae. *Journal of Cosmology and Astroparticle Physics*, 2019(10), 027. doi:10.1088/1475-7516/2019/10/027

Hanusch, A., Liseykina, V. T., Malkov, M., & Aharonian, F. (2019). Steepening of Cosmic-Ray Spectra in Shocks with Varying Magnetic Field Direction. *Astrophysical Journal*, 885(1), 11. doi:10.3847/1538-4357/ab426d

Harman, Z., Shah, C., González Martínez, A. J., Jentschura, U. D., Tawara, H., Keitel, C. H., ... Crespo López-Urrutia, J. R. (2019). Resonance strengths for KLL dielectronic recombination of highly charged mercury ions and improved empirical Z-scaling law. *Physical Review A*, 99(01), 012506. doi:10.1103/PhysRevA.99.012506

Harth, A., Douguet, N., Bartschat, K., Moshhammer, R., & Pfeifer, T. (2019). Extracting phase information on continuum-continuum couplings. *Physical Review A*, 99(2), 023410. doi:10.1103/PhysRevA.99.023410

Hartmann, M., Stooß, V., Birk, P., Borisova, G. D., Ott, C., & Pfeifer, T. (2019). Attosecond precision in delay measurements using transient absorption spectroscopy. *Optics Letters*, 44(19), 4749–4752. doi:10.1364/OL.44.004749

Haug, J., & Cavaletto, S. (2019). Light-induced states in the transient-absorption spectrum of a periodically pumped strong-field-excited system. *Physical Review A*, 99(1), 013434. doi:10.1103/PhysRevA.99.013434

HAWC Collaboration, Abeysekara, A. U., Albert, A., Alfaro, R., Alvarez, C., Álvarez, J. D., ... Zhou, H. (2019). Measurement of the Crab Nebula Spectrum Past 100 TeV with HAWC. *The Astrophysical Journal*, 881(2), 134. doi:10.3847/1538-4357/ab2f7d

Hawton, M., & Debierre, V. (2019). Photon position eigenvectors, Wigner's little group, and Berry's phase. *Journal of Mathematical Physics*, 60(5), 052104. doi:10.1063/1.5009073

He, Y., Liu, Z., Cui, Z., Zhang, Y., Pfeiffer, A. N., Pfeifer, T., ... Hui, B. (2019). Signatures of self-modulation effects during pulse propagation in single-pulse absorption spectra. *Physical Review A*, 99(5), 053418. doi:10.1103/PhysRevA.99.053418

- Hechtfisher, U., Levin, J., Lange, M., Knoll, L., Schwalm, D., Wester, R., ... Zajfman, D. (2019). Near-threshold photodissociation of cool  $\text{OH}^+$  to  $\text{O}^+ \text{H}^+$  and  $\text{O}^+ + \text{H}$ . *The Journal of Chemical Physics*, 151(4), 044303. doi:10.1063/1.5098321
- Heeck, J., Lindner, M., Rodejohann, W., & Vogl, S. (2019). Non-Standard Neutrino Interactions and Neutral Gauge Bosons. *SciPost Physics*, 6, 038. doi:10.21468/SciPostPhys.6.3.038
- Heiße, F., Rau, S., Köhler-Langes, F., Quint, W., Werth, G., Sturm, S., & Blaum, K. (2019). High-precision mass spectrometer for light ions. *Physical Review A*, 100(2), 022518. doi:10.1103/PhysRevA.100.022518
- Helmboldt, A., Kubo, J., & van der Woude, S. (2019). Observational prospects for gravitational waves from hidden or dark chiral phase transitions. *Physical Review D*, 100(5), 055025. doi:10.1103/PhysRevD.100.055025
- Henis, Z., Eliezer, S., & Raicher, E. (2019). Collisional shock waves induced by laser radiation pressure. *Laser and Particle Beams*, 37(3), 268–275. doi:10.1017/S0263034619000478
- Hoferichter, M., Klos, P., Menéndez, J., & Schwenk, A. (2019). Nuclear structure factors for general spin-independent WIMP-nucleus scattering. *Physical Review D*, 99(5), 055031. doi:10.1103/PhysRevD.99.055031
- Högberg, C., Lossow, S., Khosrawi, F., Bauer, R., Walker, K. A., Eriksson, P., ... Zhang, Q. (2019). The SPARC water vapour assessment II: profile-to-profile and climatological comparisons of stratospheric  $\delta\text{D}(\text{H}_2\text{O})$  observations from satellite. *Atmospheric Chemistry and Physics*, 19(4), 2497–2526. doi:10.5194/acp-19-2497-2019
- Hoppe, J., Drischler, C., Hebel, K., Schwenk, A., & Simonis, J. (2019). Probing chiral interactions up to next-to-next-to-next-to-leading order in medium-mass nuclei. *Physical Review C*, 100(2), 024318. doi:10.1103/PhysRevC.100.024318
- Huang, W., Atanasov, D., Audi, G., Blaum, K., Cakirli, R. B., Herlert, A., ... Zuber, K. (2019). Evaluation of high-precision atomic masses of  $A \sim 50$ –80 and rare-earth nuclides measured with ISOLTRAP. *The European Physical Journal A: Hadrons and Nuclei*, 55, 96. doi:10.1140/epja/i2019-12775-5
- Hult, M., Charette, M., Lutter, G., Marissens, G., Henderson, P., Sobiech-Matura, K., & Simgen, H. (2019). Underground gamma-ray measurements of radium isotopes from hydrothermal plumes in the deep Pacific Ocean. *Applied Radiation and Isotopes*, 153, 108831. doi:10.1016/j.apradiso.2019.108831
- Ivanov, I. P., Nishi, C. C., Silva, J. P., & Trautner, A. (2019). Basis-invariant conditions for CP symmetry of order four. *Physical Review D*, 99(1), 015039. doi:10.1103/PhysRevD.99.015039
- Ivanov, I. P., Nishi, C. C., & Trautner, A. (2019). Beyond basis invariants. *European Physical Journal C*, 79(4), 315. doi:10.1140/epjc/s10052-019-6845-x
- Joshi, V., Hinton, J., Schoorlemmer, H., López-Coto, R., & Parsons, R. D. (2019). A Template-based gamma-ray Reconstruction Method for Air Shower Arrays. *Journal of Cosmology and Astroparticle Physics*, 2019(01), 012. doi:10.1088/1475-7516/2019/01/012
- Kafexhiu, E., Aharonian, F., & Barkov, M. (2019). Nuclear gamma-ray emission from very hot accretion flows. *Astronomy and Astrophysics*, 623, A174. doi:10.1051/0004-6361/201833948
- Kafexhiu, E., Aharonian, F., & Barkov, M. (2019). Gamma-ray emission of hot astrophysical plasma. *Physical Review D*, 99(6), 063007. doi:10.1103/PhysRevD.99.063007

- Karthein, J., Atanasov, D., Blaum, K., Breitenfeldt, M., Bondar, V., George, S., ... Zuber, K. (2019). QEC-value determination for  $^{21}\text{Na} \rightarrow ^{21}\text{Ne}$  and  $^{23}\text{Mg} \rightarrow ^{23}\text{Na}$  mirror-nuclei decays using high-precision mass spectrometry with ISOLTRAP at ISOLDE/CERN. *Physical Review C*, 100, 015502. doi:10.1103/PhysRevC.100.015502
- Karthein, J., Atanasov, D., Blaum, K., Eliseev, S., Filianin, P., Lunney, D., ... Zuber, K. (2019). Direct decay-energy measurement as a route to the neutrino mass. *Hyperfine Interactions*, 240, 61. doi:10.1007/s10751-019-1601-z
- KATRIN Collaboration, Aker, M., Altenmüller, K., Arenz, M., Babutzka, M., Barrett, J., Bauer, S., ... Zeller, G. (2019). Improved Upper Limit on the Neutrino Mass from a Direct Kinematic Method by KATRIN. *Physical Review Letters*, 123(22), 221802. doi:10.1103/PhysRevLett.123.221802
- Kawamura, J., Raby, S., & Trautner, A. (2019). Complete vectorlike fourth family and new  $U(1)'$  for muon anomalies. *Physical Review D*, 100(5), 055030.
- Keitel, C. H. (2019). Wie genau trennt sich ein Elektron vom Atom?. In *Physik Journal* (Vol. 18. Jg., pp. 22–23). Weinheim: Wiley-VCH.
- Khan, A. (2019).  $\sin^2 \theta_w$  estimate and neutrino electromagnetic properties from low-energy solar data. *Journal of Physics G: Nuclear and Particle Physics*, 46(3), 035005. doi:10.1088/1361-6471/ab0057
- Kirk, J. G., & Giacinti, G. (2019). Inductive acceleration of ions in Poynting-flux dominated outflows. *The Astrophysical Journal*, 884, 62. doi:10.3847/1538-4357/ab3c61
- Klein, C., Lindner, M., & Ohmer, S. (2019). Minimal radiative neutrino masses. *Journal of High Energy Physics : JHEP*, 2019(03), 018. doi:10.1007/JHEP03(2019)018
- Klein, C., Lindner, M., & Vogl, S. (2019). Radiative neutrino masses and successful  $SU(5)$  unification. *Physical Review D*, 100(7), 075024. doi:10.1103/PhysRevD.100.075024
- Klose, A., Minamisono, K., Miller, A. J., Brown, B. A., Garand, D., Holt, J. D., ... Watkins, J. (2019). Ground State Electromagnetic Moments of  $^{37}\text{Ca}$ . *Physical Review C*, 99(6), 061301(R). doi:10.1103/PhysRevC.99.061301
- Knauer, S., Fischer, P., Marx, G., Müller, M., Rosenbusch, M., Schabinger, B., ... Wolf, R. (2019). A multi-reflection time-of-flight setup for the improvement and development of new methods and the study of atomic clusters. *International Journal of Mass Spectrometry*, 446, UNSP 116189. doi:10.1016/j.ijms.2019.116189
- Krachkov, P. A., Di Piazza, A., & Milstein, A. I. (2019). High-energy bremsstrahlung on atoms in a laser field. *Physics Letters B*, 797, 134814. doi:10.1016/j.physletb.2019.134814
- Kreckel, H., Novotný, O., & Wolf, A. (2019). Astrochemical studies at the Cryogenic Storage Ring. *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences*, 377(2154), 0412. doi:10.1098/rsta.2018.0412
- Krueger, H., Strub, P., Altobelli, N., Sterken, V. J., Srama, R., & Grün, E. (2019). Interstellar dust in the solar system: model versus in situ spacecraft data. *Astronomy and Astrophysics*, 626, A37. doi:10.1051/0004-6361/201834316
- Krueger, H., Strub, P., Srama, R., Kobayashi, M., Arai, T., Kimura, H., ... Grün, E. (2019). Modelling DESTINY+ interplanetary and interstellar dust measurements en route to the active asteroid (3200) Phaethon.

thon. *Planetary and Space Science*, 172, 22–42. doi:10.1016/j.pss.2019.04.005

Kubo, J., Lindner, M., Schmitz, K., & Yamada, M. (2019). Planck mass and inflation as consequences of dynamically broken scale invariance. *Physical Review D*, 100(01), 015037. doi:10.1103/PhysRevD.100.015037

LaForge, A. C., Shcherbinin, M., Stienkemeier, F., Richter, R., Moshhammer, R., Pfeifer, T., & Mudrich, M. (2019). Highly efficient double ionization of mixed alkali dimers by intermolecular Coulombic decay. *Nature Physics*, 15, 247–250. doi:10.1038/s41567-018-0376-5

Lau J. C., Rowell, G., Voisin, F., Blackwell, R., Burton, M. G., Braiding, C., ... Casanova, S. (2019). Probing the origin of the unidentified TeV gamma-ray source HESS J1702-420 via the surrounding interstellar medium. *Monthly Notices of the Royal Astronomical Society*, 483(3), 3659–3672. doi:10.1093/mnras/sty3326

Leopold, T., King, S. A., Micke, P., Bautista-Salvador, A., Heip, J. C., Ospelkaus, C., ... Schmidt, P. O. (2019). A cryogenic radio-frequency ion trap for quantum logic spectroscopy of highly charged ions. *Review of Scientific Instruments*, 90(7), 073201. doi:10.1063/1.5100594

LHCb collaboration, Aaij, R., Beteta, C. A., Ackernley, T., Adeva, B., Adinolfi, M., ... Zucchelli, S. (2019). Observation of new resonances in the  $\Lambda_0 b \pi^+ \pi^-$  system. *Physical Review Letters*, 123(15), 152001. doi:10.1103/PhysRevLett.123.152001

LHCb collaboration, Aaij, R., Beteta, C. A., Ackernley, T., Adeva, B., Adinolfi, M., ... Zucchelli, S. (2019). Precision measurement of the  $\Lambda^+ c$ ,  $\Xi^+ c$ , and  $\Xi_0^+ c$  baryon lifetimes. *Physical Review D*, 100(3), 032001. doi:10.1103/PhysRevD.100.032001

LHCb collaboration, Aaij, R., Beteta, C. A., Ackernley, T., Adeva, B., Adinolfi, M., ... Zucchelli, S. (2019). Search for the Lepton-Flavor-Violating Decays  $B_s^0 \rightarrow \tau^\pm \mu^{\mp/+}$  and  $B^0 \rightarrow \tau^\pm \mu^{\mp/+}$ . *Physical Review Letters*, 123(21), 211801. doi:10.1103/PhysRevLett.123.211801

LHCb collaboration, Aaij, R., Beteta, C. A., Ackernley, T., Adeva, B., Adinolfi, M., ... Zucchelli, S. (2019). Measurement of Charged Hadron Production in Z-Tagged Jets in Proton-Proton Collisions at  $\sqrt{s}=8$  TeV. *Physical Review Letters*, 123(23), 232001. doi:10.1103/PhysRevLett.123.232001

LHCb collaboration, Aaij, R., Beteta, C. A., Ackernley, T., Adeva, B., Adinolfi, M., ... Zucchelli, S. (2019). Search for Lepton-Flavor Violating Decays  $B^+ \rightarrow K^+ \mu^\pm e^{\mp/+}$ . *Physical Review Letters*, 123(24), 241802. doi:10.1103/PhysRevLett.123.241802

LHCb collaboration, Aaij, R., Beteta, C. A., Ackernley, T., Adeva, B., Adinolfi, M., ... Zucchelli, S. (2019). Search for CP Violation in  $D_s^+ \rightarrow K_s^0 \pi^+$ ,  $D^+ \rightarrow K_s^0 K^+$ , and  $D^+ \rightarrow \phi \pi^+$  Decays. *Physical Review Letters*, 122(19), 191803. doi:10.1103/PhysRevLett.122.191803

LHCb collaboration, Aaij, R., Beteta, C. A., Ackernley, T., Adeva, B., Adinolfi, M., ... Zucchelli, S. (2019). Amplitude Analysis of  $B^+ \rightarrow \pi^+ K^+ K^-$  Decays. *Physical Review Letters*, 123(23), 231802. doi:10.1103/PhysRevLett.123.231802

LHCb collaboration, Aaij, R., Beteta, C. A., Ackernley, T., Adeva, B., Adinolfi, M., ... Zucchelli, S. (2019). Measurement of the  $B_c^-$  meson production fraction and asymmetry in 7 and 13 TeV pp collisions. *Physical Review D*, 100(11), 112006. doi:10.1103/PhysRevD.100.112006

LHCb collaboration, Aaij, R., Beteta, C. A., Adeva, B., Adinolfi, M., Aidala, C. A., Ajaltouni, Z., ... Zucchelli, S. (2019). A search for  $\Xi^+ cc \rightarrow D^+ p K^- \pi^+$  decays. *Journal of High Energy Physics : JHEP*, 2019(10),

- LHCb collaboration, Aaij, R., Beteta, C. A., Adeva, B., Adinolfi, M., Aidala, C. A., Ajaltouni, Z., ... Zucchelli, S. (2019). Observation of the  $\Lambda_b^0 \rightarrow \chi c1 (3872) p K^-$  decay. *Journal of High Energy Physics : JHEP*, 2019(9), 28. doi:10.1007/JHEP09(2019)028
- LHCb collaboration, Aaij, R., Beteta, C. A., Adeva, B., Adinolfi, M., Aidala, C. A., Ajaltouni, Z., ... Zucchelli, S. (2019). Measurements of CP asymmetries in charmless four-body  $\Lambda_b^0$  and  $\Xi_b^0$  decays. *The European Physical Journal C: Particles and Fields*, 79(10), 745. doi:10.1140/epjc/s10052-019-7218-1
- LHCb collaboration, Aaij, R., Beteta, C. A., Adeva, B., Adinolfi, M., Aidala, C. A., Ajaltouni, Z., ... Zucchelli, S. (2019). Measurement of the CP-violating phase  $\phi_s$  from  $B_s^0 \rightarrow J/\psi \pi^+ \pi^-$  decays in 13 TeV pp collisions. *Physics Letters B*, 797, 134789. doi:10.1016/j.physletb.2019.07.036
- LHCb collaboration, Aaij, R., Beteta, C. A., Adeva, B., Adinolfi, M., Aidala, C. A., Ajaltouni, Z., ... Zucchelli, S. (2019). Observation of  $B_{(s)}^0 \rightarrow J/\psi pp$  Decays and Precision Measurements of the  $B_{(s)}^0$  Masses. *Physical Review Letters*, 122(19), 191804. doi:10.1103/PhysRevLett.122.191804
- LHCb collaboration, Aaij, R., Beteta, C. A., Adeva, B., Adinolfi, M., Aidala, C. A., Ajaltouni, Z., ... Zucchelli, S. (2019). Observation of Two Resonances in the  $\Lambda_b^0 \pi^\pm$  Systems and Precise Measurement of  $\Sigma_b^\pm$  and  $\Sigma_b^{*\pm}$  Properties. *Physical Review Letters*, 122(01), 012001. doi:10.1103/PhysRevLett.122.012001
- LHCb collaboration, Aaij, R., Beteta, C. A., Adeva, B., Adinolfi, M., Aidala, C. A., Ajaltouni, Z., ... Zucchelli, S. (2019). Prompt  $\Lambda_c^+$  production in pPb collisions at  $\sqrt{s_{NN}}=5.02$  TeV. *Journal of High Energy Physics : JHEP*, 2019(02), 102. doi:10.1007/JHEP02(2019)102
- LHCb collaboration, Aaij, R., Beteta, C. A., Adeva, B., Adinolfi, M., Aidala, C. A., Ajaltouni, Z., ... Zucchelli, S. (2019). Measurement of the ratio of branching fractions of the decays  $\Lambda_b^0 \rightarrow \psi_{(2S)} \Lambda$  and  $\Lambda_b^0 \rightarrow J/\psi \Lambda$ . *Journal of High Energy Physics : JHEP*, 2019(03), 126. doi:10.1007/JHEP03(2019)126
- LHCb collaboration, Aaij, R., Beteta, C. A., Adeva, B., Adinolfi, M., Aidala, C. A., Ajaltouni, Z., ... Zucchelli, S. (2019). Measurement of b hadron fractions in 13 TeV pp collisions. *Physical Review D*, 100(3), 031102(R). doi:10.1103/PhysRevD.100.031102
- LHCb collaboration, Aaij, R., Beteta, C. A., Adeva, B., Adinolfi, M., Aidala, C. A., Ajaltouni, Z., ... Zucchelli, S. (2019). Observation of an Excited  $B_c^+$  State. *Physical Review Letters*, 122(23), 232001. doi:10.1103/PhysRevLett.122.232001
- LHCb collaboration, Aaij, R., Beteta, C. A., Adeva, B., Adinolfi, M., Aidala, C. A., Ajaltouni, Z., ... Zucchelli, S. (2019). Observation of a Narrow Pentaquark State,  $P_c(4312)^+$ , and of the Two-Peak Structure of the  $P_c(4450)^+$ . *Physical Review Letters*, 122(22), 222001. doi:10.1103/PhysRevLett.122.222001
- LHCb collaboration, Aaij, R., Beteta, C. A., Adeva, B., Adinolfi, M., Aidala, C. A., Ajaltouni, Z., ... Zucchelli, S. (2019). First Observation of the Radiative Decay  $\Lambda_b^0 \rightarrow \Lambda \gamma$ . *Physical Review Letters*, 123(3), 031801. doi:10.1103/PhysRevLett.123.031801
- LHCb collaboration, Aaij, R., Beteta, C. A., Adeva, B., Adinolfi, M., Aidala, C. A., Ajaltouni, Z., ... Zucchelli, S. (2019). Measurement of the relative  $B^- \rightarrow D^0/D^{*0}/D^{*0} \mu^- \nu_\mu$  branching fractions using  $B^-$  mesons from  $B^0 s_2$  decays= 13 TeV. *Physical Review D*, 99(9), 092009. doi:10.1103/PhysRevD.99.092009
- LHCb collaboration, Aaij, R., Beteta, C. A., Adeva, B., Adinolfi, M., Aidala, C. A., Ajaltouni, Z., ... Zucchelli, S. (2019). Measurement of the branching fractions of the decays  $D^+ \rightarrow K^+ K^+ K^+$ ,  $D^+ \rightarrow \pi^+ \pi^+ K^+$  and  $D_s^+ \rightarrow \pi^+ K^+ K^+$ . *Journal of High Energy Physics : JHEP*, 2019(03), 176. doi:10.1007/JHEP03(2019)176

- LHCb collaboration, Aaij, R., Beteta, C. A., Adeva, B., Adinolfi, M., Aidala, C. A., Ajaltouni, Z., ... Zucchelli, S. (2019). Search for CP violation through an amplitude analysis of  $D^0 \rightarrow K^+K^-\pi^+\pi^-$  decays. *Journal of High Energy Physics : JHEP*, 2019(02), 126. doi:10.1007/JHEP02(2019)126
- LHCb collaboration, Aaij, R., Beteta, C. A., Adeva, B., Adinolfi, M., Aidala, C. A., Ajaltouni, Z., ... Zucchelli, S. (2019). First Measurement of Charm Production in its Fixed-Target Configuration at the LHC. *Physical Review Letters*, 122(12), 132002. doi:10.1103/PhysRevLett.122.132002
- LHCb collaboration, Aaij, R., Beteta, C. A., Adeva, B., Adinolfi, M., Aidala, C. A., Ajaltouni, Z., ... Zucchelli, S. (2019). Updated measurement of time-dependent CP-violating observables in  $B_s^0 \rightarrow J/\psi K^+K^-$  decays. *The European Physical Journal C: Particles and Fields*, 79, 706. doi:10.1140/epjc/s10052-019-7159-8
- LHCb collaboration, Aaij, R., Beteta, C. A., Adeva, B., Adinolfi, M., Aidala, C. A., Ajaltouni, Z., ... Zucchelli, S. (2019). Measurement of the Mass Difference Between Neutral Charm-Meson Eigenstates. *Physical Review Letters*, 122(23), 231802. doi:10.1103/PhysRevLett.122.231802
- LHCb collaboration, Aaij, R., Beteta, C. A., Adeva, B., Adinolfi, M., Aidala, C. A., Ajaltouni, Z., ... Zucchelli, S. (2019). Search for Lepton-Universality Violation in  $B^+ \rightarrow K^+\ell^+\ell^-$  Decays. *Physical Review Letters*, 122(19), 191801. doi:10.1103/PhysRevLett.122.191801
- LHCb collaboration, Aaij, R., Beteta, C. A., Adeva, B., Adinolfi, M., Aidala, C. A., Ajaltouni, Z., ... Zucchelli, S. (2019). Measurement of the Charm-Mixing Parameter  $\gamma_{CP}$ . *Physical Review Letters*, 122(01), 011802. doi:10.1103/PhysRevLett.122.011802
- LHCb collaboration, Aaij, R., Beteta, C. A., Adeva, B., Adinolfi, M., Aidala, C. A., Ajaltouni, Z., ... Zucchelli, S. (2019). Model-Independent Observation of Exotic Contributions to  $B^0 \rightarrow J/\psi K^+\pi^-$  Decays. *Physical Review Letters*, 122(15), 152002. doi:10.1103/PhysRevLett.122.152002
- LHCb collaboration, Aaij, R., Beteta, C. A., Adeva, B., Adinolfi, M., Aidala, C. A., Ajaltouni, Z., ... Zucchelli, S. (2019). Measurement of  $B^+$ ,  $B^0$  and  $\Lambda_b^0$  production in pPb collisions at  $\sqrt{s_{NN}}=8.16$  TeV. *Physical Review D*, 99(05), 052011. doi:10.1103/PhysRevD.99.052011
- LHCb collaboration, Aaij, R., Beteta, C. A., Adeva, B., Adinolfi, M., Aidala, C. A., Ajaltouni, Z., ... Zucchelli, S. (2019). Amplitude analysis of the  $B_{(s)}^0 \rightarrow K^* K^* 0$  decays and measurement of the branching fraction of the  $B^0 \rightarrow K^* K^* 0$  decay. *Journal of High Energy Physics : JHEP*, 2019(07), 32. doi:10.1007/JHEP07(2019)032
- Aaij, R., Beteta, C. A., Adeva, B., Adinolfi, M., Aidala, C. A., Ajaltouni, Z., ... Zucchelli, S. (2019). Near-threshold DD-spectroscopy and observation of a new charmonium state. *Journal of High Energy Physics : JHEP*, 2019(07), 35. doi:10.1007/JHEP07(2019)035
- LHCb collaboration, Aaij, R., Beteta, C. A., Adeva, B., Adinolfi, M., Aidala, C. A., Ajaltouni, Z., ... Zucchelli, S. (2019). Measurement of the branching fraction and asymmetry in  $B^+ \rightarrow J/\psi \rho^+$  decays. *The European Physical Journal C: Particles and Fields*, 79, 537. doi:10.1140/epjc/s10052-019-6698-3
- LHCb collaboration, Aaij, R., Beteta, C. A., Adeva, B., Adinolfi, M., Aidala, C. A., Ajaltouni, Z., ... Zucchelli, S. (2019). Observation of CP Violation in Charm Decays. *Physical Review Letters*, 122(21), 211803. doi:10.1103/PhysRevLett.122.211803
- LHCb collaboration, Aaij, R., Beteta, C. A., Adeva, B., Adinolfi, M., Aidala, C. A., Ajaltouni, Z., ... Zucchelli, S. (2019). Measurement of the mass and production rate of  $\Xi_b^-$  baryons. *Physical Review D*, 99(05), 052006. doi:10.1103/PhysRevD.99.052006

- LHCb collaboration, Aaij, R., Beteta, C. A., Adeva, B., Adinolfi, M., Aidala, C. A., Ajaltouni, Z., ... Zucchelli, S. (2019). Search for the rare decay  $B^+ \rightarrow \mu^+ \mu^- \mu^+ \nu_\mu$ . *The European Physical Journal C: Particles and Fields*, 79, 675. doi:10.1140/epjc/s10052-019-7112-x
- LHCb collaboration, Aaij, R., Beteta, C. A., Adeva, B., Adinolfi, M., Aidala, C. A., Ajaltouni, Z., ... Zucchelli, S. (2019). Measurement of CP-Violating and Mixing-Induced Observables in  $B_s^0 \rightarrow \phi \gamma$  Decays. *Physical Review Letters*, 123(8), 081802. doi:10.1103/PhysRevLett.123.081802
- LHCb collaboration, Aaij, R., Beteta, C. A., Adeva, B., Adinolfi, M., Aidala, C. A., Ajaltouni, Z., ... Zucchelli, S. (2019). Erratum to: Measurement of  $\Upsilon$  production in pp collisions at  $s = 13$  TeV (Journal of High Energy Physics, (2018), 2018, 7, (134), 10.1007/JHEP07(2018)134)= 13 TeV. *Journal of High Energy Physics : JHEP*, 2019(05), 076. doi:10.1007/JHEP05(2019)076
- LHCb collaboration, Aaij, R., Beteta, C. A., Adeva, B., Adinolfi, M., Aidala, C. A., Ajaltouni, Z., ... Zucchelli, S. (2019). Dalitz plot analysis of the  $D^+ \rightarrow K^- K^+ K^+$  decay. *Journal of High Energy Physics : JHEP*, 2019(04), 063. doi:10.1007/JHEP04(2019)063
- Aaij, R., Beteta, C. A., Adeva, B., Adinolfi, M., Aidala, C. A., Ajaltouni, Z., ... Zucchelli, S. (2019). Observation of the doubly Cabibbo-suppressed decay  $\Xi_c^+ \rightarrow p \phi$ . *Journal of High Energy Physics : JHEP*, 2019(04), 084. doi:10.1007/JHEP04(2019)084
- LHCb collaboration, Aaij, R., Beteta, C. A., Adeva, B., Adinolfi, M., Aidala, C. A., Ajaltouni, Z., ... Zucchelli, S. (2019). Study of the  $B^0 \rightarrow \rho(770)^0 K^*(892)^0$  decay with an amplitude analysis of  $B^0 \rightarrow (\pi^+ \pi^-)(K^+ \pi^-)$  decays. *Journal of High Energy Physics : JHEP*, 2019(05), 26. doi:10.1007/JHEP05(2019)026
- LHCb collaboration, Aaij, R., Beteta, C. A., Adeva, B., Adinolfi, M., Aidala, C. A., Ajaltouni, Z., ... Zucchelli, S. (2019). Measurement of CP observables in the process  $B^0 \rightarrow DK^{*0}$  with two- and four-body D decays. *Journal of High Energy Physics : JHEP*, 2019(08), 41. doi:10.1007/JHEP08(2019)041
- LHCb collaboration, Aaij, R., Beteta, C. A., Adeva, B., Adinolfi, M., Aidala, C. A., Ajaltouni, Z., ... Zucchelli, S. (2019). Amplitude analysis of  $B_s^0 \rightarrow K_s^0 K^\pm \pi^\mp$  decays. *Journal of High Energy Physics : JHEP*, 2019(06), 114. doi:10.1007/JHEP06(2019)114
- Li, Y.-F., Guo, R.-T., Shaisultanov, R., Hatsagortsyan, K. Z., & Li, J.-X. (2019). Electron Polarimetry with Nonlinear Compton Scattering. *Physical Review Applied*, 12(1), 014047. doi:10.1103/PhysRevApplied.12.014047
- Li, Y.-F., Li, J.-X., Hatsagortsyan, K. Z., Zhao, Y.-T., Zhang, B., Li, Y.-T., ... Keitel, C. H. (2019). Determining the carrier-envelope phase of relativistic laser pulses via electron-momentum distribution. *Physical Review A*, 99(1), 013850. doi:10.1103/PhysRevA.99.013850
- Li, Y.-F., Shaisultanov, R., Hatsagortsyan, K. Z., Wan, F., Keitel, C. H., & Li, J.-X. (2019). Ultrarelativistic Electron-Beam Polarization in Single-Shot Interaction with an Ultraintense Laser Pulse. *Physical Review Letters*, 122(15), 154801. doi:10.1103/PhysRevLett.122.154801
- Link, J. M., & Xu, X. (2019). Searching for BSM neutrino interactions in dark matter detectors. *Journal of High Energy Physics : JHEP*, 2019(08), 004. doi:10.1007/JHEP08(2019)004
- Liu, B., Yang, R., Sun, X., Aharonian, F., & Chen, Y. (2019). The GeV Emission in the Field of the Star-forming Region W30 Revisited. *Astrophysical Journal*, 881(2), 94. doi:10.3847/1538-4357/ab2df8
- Liu, H. N., Obertelli, A., Doornenbal, P., Bertulani, C. A., Hagen, G., Holt, J. D., ... Zanetti, L. (2019). How Robust is the  $N = 34$  Subshell Closure? First Spectroscopy of  $^{52}\text{Ar}$ . *Physical Review Letters*, 122(7), 072502.

doi:10.1103/PhysRevLett.122.072502

Liu, X., Amini, K., Steinle, T., Sanchez, A., Shaikh, M., Belsa, B., ... Biegert, J. (2019). Imaging an isolated water molecule using a single electron wave packet. *The Journal of Chemical Physics*, 151(2), 024306. doi:10.1063/1.5100520

Lu, Q., He, J., Tian, H., Li, M., Yang, Y., Yao, K., ... Zou, Y. (2019). Observation of indirect ionization of  $W^{7+}$  in an electron-beam ion-trap plasma. *Physical Review A*, 99(4), 042510. doi:10.1103/PhysRevA.99.042510

Mackenroth, F., Kumar, N., Neitz, N., & Keitel, C. H. (2019). Nonlinear Compton scattering of an ultraintense laser pulse in a plasma. *Physical Review E*, 99(3), 033205. doi:10.1103/PhysRevE.99.033205

Mackey, J., Walch, S., Seifried, D., Glover, S. C. O., Wuensch, R., & Aharonian, F. (2019). Non-equilibrium chemistry and destruction of CO by X-ray flares. *Monthly Notices of the Royal Astronomical Society*, 486(1), 1094–1122. doi:10.1093/mnras/stz902

Malkov, M. A., & Aharonian, F. A. (2019). Cosmic-ray Spectrum Steepening in Supernova Remnants. I. Loss-free Self-similar Solution. *Astrophysical Journal*, 881(1), 2. doi:10.3847/1538-4357/ab2c01

Mercadier, L., Benediktovitch, A., Weninger, C., Blessenohl, M. A., Bernitt, S., Bekker, H., ... Rohringer, N. (2019). Evidence of Extreme Ultraviolet Superfluorescence in Xenon. *Physical Review Letters*, 123(2), 023201. doi:10.1103/PhysRevLett.123.023201

Michel, N., & Oreshkina, N. S. (2019). Higher-order corrections to the dynamic hyperfine structure of muonic atoms. *Physical Review A*, 99(4), 042501. doi:10.1103/PhysRevA.99.042501

Michel, N., Zatorski, J., Oreshkina, N. S., & Keitel, C. H. (2019). Nonperturbative analysis of nuclear shape effects on the bound electron  $g$  factor. *Physical Review A*, 99(1), 012505. doi:10.1103/PhysRevA.99.012505

Micke, P., Stark, J., King, S. A., Leopold, T., Pfeifer, T., Schmoeger, L., ... Crespo López Urrutia, J. R. (2019). Closed-cycle, low-vibration 4 K cryostat for ion traps and other applications. *Review of Scientific Instruments*, 90(6), 065104. doi:10.1063/1.5088593

Minkov, N., & Pálffy, A. (2019). Theoretical Predictions for the Magnetic Dipole Moment of  $^{229m}\text{Th}$ . *Physical Review Letters*, 122(16), 162502. doi:10.1103/PhysRevLett.122.162502

Minkov, N., & Pálffy, A. (2019). The Magnetic Moment as a Constraint in Determining the  $^{229m}\text{Th}$  Isomer Decay Rates. *Acta Physica Polonica B*, 12(3), 629–636. doi:10.5506/APhysPolBSupp.12.629

Mistry, A. K., Khuyagbaatar, J., Hessberger, F. P., Ackermann, D., Andel, B., Antalic, S., ... Zhang, Z. (2019). The  $^{48}\text{Ca} + ^{181}\text{Ta}$  reaction: Cross section studies and investigation of neutron-deficient  $86 \leq Z \leq 93$  isotopes. *Nuclear Physics A*, 987, 337–349. doi:10.1016/j.nuclphysa.2019.05.003

Mitchell, A. M. W., Dembinski, H. P., & Parsons, R. D. (2019). Potential for measuring the longitudinal and lateral profile of muons in TeV air showers with IACTs. *Astroparticle Physics*, 111, 23–34. doi:10.1016/j.astropartphys.2019.03.005

Morris, P. J., Chakraborty, N., & Cotter, G. (2019). Deviations from normal distributions in artificial and real time series: a false positive prescription. *Monthly Notices of the Royal Astronomical Society*, 489(2), 2117–2129. doi:10.1093/mnras/stz2259



- Niederwanger, F., Reimer, O., Kissmann, R., Strong, A. W., Popescu, C. C., & Tuffs, R. (2019). The consequence of a new ISRF model of the Milky Way on predictions for diffuse gamma-ray emission. *Astroparticle Physics*, 107, 1–14. doi:10.1016/j.astropartphys.2018.11.001
- Nigro, C., Deil, C., Zanin, R., Hassan, T., King, J., Ruiz, J. E., ... Sinha, A. (2019). Towards open and reproducible multi-instrument analysis in gamma-ray astronomy. *Astronomy and Astrophysics*, 625, A10. doi:10.1051/0004-6361/201834938
- Novotný, O., Wilhelm, P., Paul, D., Kalosi, A., Saurabh, S., Becker, A., ... Wolf, A. (2019). Quantum-state-selective electron recombination studies suggest enhanced abundance of primordial HeH<sup>+</sup>. *Science*, 365(6454), 676–679. doi:10.1126/science.aax5921
- Obaid, R., Schnorr, K., Wolf, T. J. A., Takanashi, T., Kling, N. G., Kooser, K., ... Berrah, N. (2019). Photoionization and fragmentation of Sc<sub>3</sub>N@C<sub>80</sub> following excitation above the Sc K-edge. *The Journal of Chemical Physics*, 151(10), 104308. doi:10.1063/1.5110297
- Ohmer, S. (2019). Spontaneous CP violation and the strong CP problem in left-right symmetric theories. *Physical Review D*, 99(11), 115031. doi:10.1103/PhysRevD.99.115031
- Osmanov, Z., & Rieger, F. M. (2019). Rotationally driven VHE emission from the Vela pulsar. *Astronomy and Astrophysics*, 627, A22. doi:10.1051/0004-6361/201935030
- Ott, C., Aufleger, L., Ding, T., Rebholz, M., Magunia, A., Hartmann, M., ... Pfeifer, T. (2019). Strong-field extreme-ultraviolet dressing of atomic double excitation. *Physical Review Letters*, 123(16), 163201. doi:10.1103/PhysRevLett.123.163201
- Owen, E. R., Wu, K., Jin, X., Surajbali, P., & Kataoka, N. (2019). Starburst and post-starburst high-redshift protogalaxies: The feedback impact of high energy cosmic rays. *Astronomy and Astrophysics*, 626, A85. doi:10.1051/0004-6361/201834350
- Parsons, R. D., & Schoorlemmer, H. (2019). Systematic differences due to high energy hadronic interaction models in air shower simulations in the 100 GeV–100 TeV range. *Physical Review D*, 100(2), 023010. doi:10.1103/PhysRevD.100.023010
- Peretti, E., Blasi, P., Aharonian, F., & Morlino, G. (2019). Cosmic ray transport and radiative processes in nuclei of starburst galaxies. *Monthly Notices of the Royal Astronomical Society*, 487(1), 168–180. doi:10.1093/mnras/stz1161
- Podszus, T., & Di Piazza, A. (2019). High-energy behavior of strong-field QED in an intense plane wave. *Physical Review D*, 99(7), 076004. doi:10.1103/PhysRevD.99.076004
- Povh, B., & Rosina, M. (2019). Proton Spin in Deep Inelastic Scattering. *Acta Physica Polonica B*, 12(4), 831–836. doi:10.5506/APhysPolBSupp.12.831
- Raaijmakers, G., Riley, T. E., Watts, A. L., Greif, S. K., Morsink, S. M., Hebel, K., ... Wolff, M. T. (2019). A NICER view of PSR J0030+0451: Implications for the dense matter equation of state. *Astrophysical Journal Letters*, 887(1), L22. doi:10.3847/2041-8213/ab451a
- Raicher, E., Eliezer, S., Keitel, C. H., & Hatsagortsyan, K. Z. (2019). Semiclassical limitations for photon emission in strong external fields. *Physical Review A*, 99(5), 052513. doi:10.1103/PhysRevA.99.052513
- Recchia, S., Gabici, S., Aharonian, F. A., & Vink, J. (2019). Local fading accelerator and the origin of TeV cosmic ray electrons. *Physical Review D*, 99(10), 103022. doi:10.1103/PhysRevD.99.103022

- Rieger, F. M., & Duffy, P. (2019). Particle Acceleration in Shearing Flows: Efficiencies and Limits. *The Astrophysical Journal Letters*, 886(2), L26. doi:10.3847/2041-8213/ab563f
- Rodejohann, W., & Saldana Salazar, U. J. (2019). Multi-Higgs-doublet models and singular alignment. *Journal of High Energy Physics : JHEP*, 2019(7), 036. doi:10.1007/JHEP07(2019)036
- Rodejohann, W., & Xu, X.-J. (2019). Loop-enhanced rate of neutrinoless double beta decay. *Journal of High Energy Physics : JHEP*, 2019(11), 29. doi:10.1007/JHEP11(2019)029
- Romero-Wolf, A., Wissel, S. A., Schoorlemmer, H., Carvalho Jr, W. R., Alvarez-Muniz, J., Zas, E., ... Wang, S. H. (2019). Comprehensive analysis of anomalous ANITA events disfavors a diffuse tau-neutrino flux origin. *Physical Review D*, 99(6), 063011. doi:10.1103/PhysRevD.99.063011
- Sailer, S., Werner, F., Hermann, G., Barcelo, M., Bauer, C., Bernhard, S., ... Wolf, D. (2019). Trigger performance verification of the FlashCam prototype camera. *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, 936, 392–393. doi:10.1016/j.nima.2018.08.104
- Salamin, Y. I. (2019). Momentum and energy considerations of a Bessel-Bessel laser bullet. *OSA Continuum*, 2(7), 2162–2171. doi:10.1364/OSAC.2.002162
- Schippers, S., Sokell, E., Aumayr, F., Sadeghpour, H., Ueda, K., Bray, I., ... O'Sullivan, G. (2019). Roadmap on photonic, electronic and atomic collision physics: II. Electron and antimatter interactions. *Journal of Physics B: Atomic, Molecular and Optical Physics*, 52, 171002. doi:10.1088/1361-6455/ab26e0
- Schmid, G., Schnorr, K., Augustin, S., Meister, S., Lindenblatt, H. C., Trost, F., ... Moshhammer, R. (2019). Reaction microscope endstation at FLASH2. *Journal of Synchrotron Radiation*, 26(part3), 854–867. doi:10.1107/S1600577519002236
- Schmid, G., Schnorr, K., Augustin, S., Meister, S., Lindenblatt, H. C., Trost, F., ... Moshhammer, R. (2019). Tracing charge transfer in argon dimers by XUV-pump IR-probe experiments at FLASH. *The Journal of Chemical Physics*, 151(8), 084314. doi:10.1063/1.5116234
- Schmid, G., Schnorr, K., Augustin, S., Meister, S., Lindenblatt, H. C., Trost, F., ... Moshhammer, R. (2019). Terahertz-Field-Induced Time Shifts in Atomic Photoemission. *Physical Review Letters*, 122(7), 073001. doi:10.1103/PhysRevLett.122.073001
- Schneider, A., Mooser, A., Rischka, A., Blaum, K., Ulmer, S., & Walz, J. (2019). A Novel Penning-Trap Design for the High-Precision Measurement of the  $3\text{He}^{2+}$  Nuclear Magnetic Moment. *Annalen Der Physik*, 531(5), 1800485. doi:10.1002/andp.201800485
- Schoorlemmer, H., Hinton, J., & Lopez Coto, R. (2019). Characteristics of extensive air showers around the energy threshold for ground-particle-based  $\gamma$ -ray observatories. *European Physical Journal C*, 79, 427. doi:10.1140/epjc/s10052-019-6942-x
- Schuh, M., Heiße, F., Eronen, T., Ketter, J., Köhler-Langes, F., Rau, S., ... Blaum, K. (2019). Image charge shift in high-precision Penning traps. *Physical Review A*, 100(2), 023411. doi:10.1103/PhysRevA.100.023411
- Schweiger, C., König, C., Crespo López-Urrutia, J. R., Door, M., Dorrer, H., Düllmann, C. E., ... Blaum, K. (2019). Production of highly charged ions of rare species by laser-induced desorption inside an electron beam ion trap. *Review of Scientific Instruments*, 90, 123201. doi:10.1063/1.5128331

- Seiferle, B., von der Wense, L., Bilous, P. V., Amersdorffer, I., Lemell, C., Libisch, F., ... Thiof, P. G. (2019). Energy of the  $^{229}\text{Th}$  nuclear clock transition. *Nature*, 573(7773), 243–246. doi:10.1038/s41586-019-1533-4
- Sels, S., Goodacre, T. D., Marsh, B. A., Pastore, A., Ryssens, W., Tsunoda, Y., ... Zadvornaya, A. (2019). Shape staggering of mid-shell mercury isotopes from in-source laser spectroscopy compared with Density Functional Theory and Monte Carlo Shell Model calculations. *Physical Review C*, 99, 044306. doi:10.1103/PhysRevC.99.044306
- Shaaran, T., Camus, N., Dura, J., Fechner, L., Thai, A., Britz, A., ... Moshhammer, R. (2019). Role of high ponderomotive energy in laser-induced nonsequential double ionization. *Physical Review A*, 99(2), 023421. doi:10.1103/PhysRevA.99.023421
- Shah, C., Crespo Lopez-Urrutia, J. R., Gu, M. F., Pfeifer, T., Marques, J., Grilo, F., ... Amaro, P. (2019). Revisiting the Fe XVII line emission problem: laboratory measurements of the 3s-2p and 3d-2p line-formation channels. *Astrophysical Journal*, 881, 100. doi:10.3847/1538-4357/ab2896
- Shcherbinin, M. V., Vad Westergaard, F., Hanif, M., Krishnan, S. R., LaForge, A. C., Richter, R., ... Mudrich, M. (2019). Inelastic scattering of photoelectrons from He nanodroplets. *The Journal of Chemical Physics*, 150(4), 044304. doi:10.1063/1.5074130
- Sinha, U., Keitel, C. H., & Kumar, N. (2019). Polarized Light from the Transportation of a Matter-Antimatter Beam in a Plasma. *Physical Review Letters*, 122(20), 204801. doi:10.1103/PhysRevLett.122.204801
- Skoromnik, O. D., Feranchuk, I. D., & Lu, D. V. (2019). Parametric X-ray radiation in the Smith-Purcell geometry for non-destructive beam diagnostics. *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms*, 444, 125–134. doi:10.1016/j.nimb.2019.01.003
- Smith, R., Kallman, T., Temi, P., Heilmann, R., Hodges-Kluck, E., Wilms, J., ... Miller, E. (2019). Laboratory Astrophysics Needs for X-ray Grating Spectrometers. *Bulletin of the American Astronomical Society*, 51(7), 110.
- Smorra, C., Stadnik, Y. V., Blessing, P. E., Bohman, M., Borchert, M. J., Devlin, J. A., ... Ulmer, S. (2019). Direct limits on the interaction of antiprotons with axion-like dark matter. *Nature*, 575(7782), 310–314. doi:10.1038/s41586-019-1727-9
- Soja, R. H., Grün, E., Strub, P., Sommer, M., Millinger, M., Vaubaillon, J., ... Srama, R. (2019). IMEM2: a meteoroid environment model for the inner solar system. *Astronomy and Astrophysics*, 628, A109. doi:10.1051/0004-6361/201834892
- Stefanik, S., Nosek, D., De los Reyes, R., Gaug, M., & Travnicek, P. (2019). Atmospheric monitoring and inter-calibration of the telescope optical throughput efficiencies using the trigger rates of the Cherenkov Telescope Array. *Astroparticle Physics*, 109, 12–24. doi:10.1016/j.astropartphys.2019.02.002
- Stoß, V., Hartmann, M., Birk, P., Borisova, G. D., Ding, T., Blättermann, A., ... Pfeifer, T. (2019). XUV-beamline for attosecond transient absorption measurements featuring a broadband common beam-path time-delay unit and in situ reference spectrometer for high stability and sensitivity. *Review of Scientific Instruments*, 90(5), 053108. doi:10.1063/1.5091069
- Strub, P., Sterken, V. J., Soja, R., Krueger, H., Grün, E., & Srama, R. (2019). Heliospheric modulation of the interstellar dust flow on to Earth. *Astronomy and Astrophysics*, 621, A54. doi:10.1051/0004-6361/201832644
- Sturm, S., Arapoglou, I., Egl, A., Höcker, M., Kraemer, S., Sailer, T., ... Blaum, K. (2019). The ALPHA-

- TRAP experiment. *European Physical Journal - Special Topics*, 227(13), 1425–1491. doi:10.1140/epjst/e2018-800225-2
- Sun, X.-N., Yang, R., Liu, B., Xi, S.-Q., & Wang, X.-Y. (2019). Tentative evidence of spatially extended GeV emission from SS433/W50. *Astronomy and Astrophysics*, 626, A113. doi:10.1051/0004-6361/201935621
- Tang, S., & Kumar, N. (2019). Ultraintense attosecond pulse emission from relativistic laser-plasma interaction. *Plasma Physics and Controlled Fusion*, 61, 025013. doi:10.1088/1361-6587/aaf378
- Taniuchi, R., Santamaria, C., Doornenbal, P., Obertelli, A., Yoneda, K., Authelet, G., ... Xu, Z. Y. (2019).  $^{78}\text{Ni}$  revealed as a doubly magic stronghold against nuclear deformation. *Nature*, 569(7754), 52–+. doi:10.1038/s41586-019-1155-x
- XENON1T Collaboration, Aprile, E., Alfonsi, M., Arisaka, K., Arneodo, F., Balan, C., Baudis, L., ... Weinheimer, C. (2019). The XENON1T data acquisition system. *Journal of Instrumentation*, 14, P07016. doi:10.1088/1748-0221/14/07/P07016
- XENON1T Collaboration, Aprile, E., Alfonsi, M., Arisaka, K., Arneodo, F., Balan, C., Baudis, L., ... Weinheimer, C. (2019). XENON1T dark matter data analysis: Signal and background models and statistical inference. *Physical Review D*, 99(11), 112009. doi:10.1103/PhysRevD.99.112009
- XENON1T Collaboration, Aprile, E., Alfonsi, M., Arisaka, K., Arneodo, F., Balan, C., Baudis, L., ... Weinheimer, C. (2019). Constraining the Spin-Dependent WIMP-Nucleon Cross Sections with XENON1T. *Physical Review Letters*, 122(14), 141301. doi:10.1103/PhysRevLett.122.141301
- XENON1T Collaboration, Aprile, E., Alfonsi, M., Arisaka, K., Arneodo, F., Balan, C., Baudis, L., ... Weinheimer, C. (2019). XENON1T dark matter data analysis: Signal reconstruction, calibration, and event selection. *Physical Review D*, 100(5), 052014. doi:10.1103/PhysRevD.100.052014
- XENON1T Collaboration, Aprile, E., Alfonsi, M., Arisaka, K., Arneodo, F., Balan, C., Baudis, L., ... Weinheimer, C. (2019). Observation of two-neutrino double electron capture in  $^{124}\text{Xe}$  with XENON1T. *Nature*, 568(7753), 532–535. doi:10.1038/s41586-019-1124-4
- Trautner, A. (2019). Systematic construction of basis invariants in the 2HDM. *Journal of High Energy Physics : JHEP*, 2019(5), 208. doi:10.1007/JHEP05(2019)208
- Tsuji, N., Uchiyama, Y., Aharonian, F., Berge, D., Higurashi, R., Krivonos, R., & Tanaka, T. (2019). NuSTAR Observations of the Supernova Remnant RX J1713.7-3946. *Astrophysical Journal*, 877(2), 96. doi:10.3847/1538-4357/ab1b29
- Ueda, K., Sokell, E., Schippers, S., Aumayr, F., Sadeghpour, H., Burgdörfer, J., ... Tanaka, K. A. (2019). Roadmap on photonic, electronic and atomic collision physics: I. Light–matter interaction. *Journal of Physics B: Atomic, Molecular and Optical Physics*, 52, 171001. doi:10.1088/1361-6455/ab26d7
- Velte, C., Ahrens, F., Barth, A., Blaum, K., Braß, M., Door, M., ... Zuber, K. (2019). High-resolution and low-background  $^{163}\text{Ho}$  spectrum: interpretation of the resonance tails. *European Physical Journal C*, 79, 1026. doi:10.1140/epjc/s10052-019-7513-x
- Viana, A., Schoorlemmer, H., Albert, A., de Souza, V., Harding, J. P., & Hinton, J. (2019). Searching for dark matter in the Galactic halo with a wide field of view TeV gamma-ray observatory in the Southern Hemisphere. *Journal of Cosmology and Astroparticle Physics*, 12, 061. doi:10.1088/1475-7516/2019/12/061
- Voisin, F. J., Rowell, G. P., Burton, M. G., Fukui, Y., Sano, H., Aharonian, F., ... Lau, J. (2019). Connecting

- the ISM to TeV PWNe and PWN candidates. *Publications of the Astronomical Society of Australia*, 36, e014. doi:10.1017/pasa.2019.7
- Wan, F., Shaisultanov, R., Li, Y.-F., Hatsagortsyan, K. Z., Keitel, C. H., & Li, J.-X. (2019). Ultrarelativistic polarized positron jets via collision of electron and ultraintense laser beams. *Physics Letters B*, 800, 135120. doi:10.1016/j.physletb.2019.135120
- Wan, F., Xue, K., Dou, Z.-K., Hatsagortsyan, K. Z., Yan, W., Khikhlikha, D., ... Li, J.-X. (2019). Imprint of the stochastic nature of photon emission by electrons on the proton energy spectra in the laser-plasma interaction. *Plasma Physics and Controlled Fusion*, 61, 084010. doi:10.1088/1361-6587/ab2b2c
- Wang, E., Shan, X., Shen, Z., Cong, M., Tang, Y., & Chen, X. (2019). Fragmentation dynamics of nitrogen trifluoride induced by electron collision. *The Journal of Chemical Physics*, 151(13), 134308. doi:10.1063/1.5123288
- Watts, A. L., Yu, W., Poutanen, J., Zhang, S., Bhattacharyya, S., Bogdanov, S., ... Zhou, X. (2019). Dense matter with eXTP. *Science China - Physics, Mechanics & Astronomy*, 62, 29503. doi:10.1007/s11433-017-9188-4
- Wen, M., Salamin, Y. I., & Keitel, C. H. (2019). Electron acceleration by a radially-polarized laser pulse in a plasma micro-channel : erratum . *Optics Express*, 27(13), 18958–18958. doi:10.1364/OE.27.018958
- Wen, M., Salamin, Y. I., & Keitel, C. H. (2019). Electron acceleration by a radially-polarized laser pulse in a plasma micro-channel. *Optics Express*, 27(2), 557–566. doi:10.1364/OE.27.000557
- Wen, M., Tamburini, M., & Keitel, C. H. (2019). Polarized Laser-WakeField-Accelerated Kiloampere Electron Beams. *Physical Review Letters*, 122(21), 214801. doi:10.1103/PhysRevLett.122.214801
- White, T.-G., Oliver, M.-T., Mabey, P., Kühn-Kauffeldt, M., Bott, A.-F.-A., Döhl, L.-N.-K., ... Gregori, G. (2019). Supersonic plasma turbulence in the laboratory. *Nature Communications*, 10, 1758. doi:10.1038/s41467-019-09498-y
- Willenberg, B., Maurer, J., Keller, U., Daněk, J., Klaiber, M., Teeny, N., ... Keitel, C. H. (2019). Holographic interferences in strong-field ionization beyond the dipole approximation: The influence of the peak and focal-volume-averaged laser intensities. *Physical Review A*, 100(3), 033417. doi:10.1103/PhysRevA.100.033417
- Wistisen, T. N., & Di Piazza, A. (2019). Numerical approach to the semiclassical method of radiation emission for arbitrary electron spin and photon polarization. *Physical Review D*, 100(11), 116001. doi:10.1103/PhysRevD.100.116001
- Wistisen, T. N., Di Piazza, A., Nielsen, C. F., Sørensen, A. H., & Uggerhøj, U. I. (2019). Quantum radiation reaction in aligned crystals beyond the local constant field approximation. *Physical Review Research*, 1(3), 033014. doi:10.1103/PhysRevResearch.1.033014
- Wistisen, T. N. (2019). Investigation of two-photon emission in strong field QED using channeling in a crystal. *Physical Review D*, 100(3), 036002. doi:10.1103/PhysRevD.100.036002
- Wistisen, T. N., & Di Piazza, A. (2019). Complete treatment of single-photon emission in planar channeling. *Physical Review D*, 99(11), 116010. doi:10.1103/PhysRevD.99.116010
- Wu, P. (2019). Chromospheric UV bursts and turbulent driven magnetic reconnection. *Astrophysical Journal*, 885(2), 158. doi:10.3847/1538-4357/ab4a06

Wu, Y., Keitel, C. H., & Pálffy, A. (2019).  $93\text{mMo}$  Isomer Depletion via Beam-Based Nuclear Excitation by Electron Capture. *Physical Review Letters*, 122(21), 212501. doi:10.1103/PhysRevLett.122.212501

Wu, Y., Keitel, C. H., & Pálffy, A. (2019). X-ray-assisted nuclear excitation by electron capture in optical laser-generated plasmas. *Physical Review A*, 100(6), 063420. doi:10.1103/PhysRevA.100.063420

Xie, L., Yang, X. F., Wraith, C., Babcock, C., Bieroń, J., Billowes, J., ... Yordanov, D. T. (2019). Nuclear charge radii of  $^{62-80}\text{Zn}$  and their dependence on cross-shell proton excitations. *Physics Letters B*, 797, 134805. doi:10.1016/j.physletb.2019.134805

Xu, S., Ma, C., Wang, E., Hu, P., Wang, X., Zhao, Y., ... Ren, X. (2019). Observation of strong relativistic and distorted-wave effects in  $(e,2e)$  electron-momentum spectroscopy of mercury. *Physical Review A*, 99(2), 022705. doi:10.1103/PhysRevA.99.022705

Xu, X., Liu, J. H., Yuan, C. X., Xing, Y. M., Wang, M., Zhang, Y. H., ... Xu, F. R. (2019). Masses of ground and isomeric states of  $^{101}\text{In}$  and configuration-dependent shell evolution in odd- $A$  indium isotopes. *Physical Review C*, 100(05), 051303(R). doi:10.1103/PhysRevC.100.051303

Xu, X., Wang, M., Blaum, K., Holt, J. D., Litvinov, Y. A., Schwenk, A., ... Zhan, W. L. (2019). Masses of neutron-rich  $^{52-54}\text{Sc}$  and  $^{54,56}\text{Ti}$  nuclides: The  $N=32$  subshell closure in scandium. *Physical Review C*, 99(6), 064303. doi:10.1103/PhysRevC.99.064303

Xu, X. (2019). Tensor and scalar interactions of neutrinos may lead to observable neutrino magnetic moments. *Physical Review D*, 99(7), 075003. doi:10.1103/PhysRevD.99.075003

Xu, Z., Hu, P., Wang, E., Xu, S., Wang, X., Zhao, Y., ... Ren, X. (2019). Experimental and theoretical study of valence electronic structure of tetrabromomethane by  $(e, 2e)$  electron momentum spectroscopy. *Physical Review A*, 99(6), 062705. doi:10.1103/PhysRevA.99.062705

Yang, R., & Aharonian, F. (2019). Interpretation of the excess of antiparticles within a modified paradigm of galactic cosmic rays. *Physical Review D*, 100(6), 063020. doi:10.1103/PhysRevD.100.063020

Yordanov, D. T., Kowalska, M., Blaum, K., De Rydt, M., Flanagan, K. T., Himpe, P., ... Stroke, H. (2019). Quadrupole Moments of  $^{29}\text{Mg}$  and  $^{33}\text{Mg}$ . *Hyperfine Interactions*, 240, 67. doi:10.1007/s10751-019-1609-4

Yue, K., Zhang, J. T., Tu, X. L., Shao, C. J., Li, H. X., Ma, P., ... Zhou, X. H. (2019). Measurement of  $^{58}\text{Ni}(p,p)^{58}\text{Ni}$  elastic scattering at low momentum transfer by using the HIRFL-CSR heavy-ion storage ring. *Physical Review C*, 100(5), 054609. doi:10.1103/PhysRevC.100.054609

Zhang, J. T., Yue, K., Lie, H. X., Tu, X. L., Shao, C. J., Ma, P., ... Zhou, X. H. (2019). The development of in-ring reaction measurements at the HIRFL-CSR. *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, 948, UNSP 162848. doi:10.1016/j.nima.2019.162848

Zorn, J. (2019). CHEC-A compact high energy camera for the Cherenkov Telescope Array. *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, 936, 229–230. doi:10.1016/j.nima.2018.09.138

Zorn, J., Daumiller, K., Engel, R., Mathes, H.-J., Riegel, M., Smida, R., & Werner, F. (2019). A photomultiplier tube test stand and on-site measurements to characterise the performance of Photonis XP3062 photomultiplier tubes at increased background light conditions and lower gain. *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, 938, 20–28. doi:10.1016/j.nima.2019.05.065

Zurlo, N., Aghion, S., Amsler, C., Antonello, M., Belov, A., Bonomi, G., ... Zmeskal, J. (2019). Monte-Carlo simulation of positronium laser excitation and anti-hydrogen formation via charge exchange. *Hyperfine Interactions*, 240, 18. doi:10.1007/s10751-019-1553-3

## Conference Papers 2019

Boisson, C., Ruiz, J. E., Deil, C., Donath, A., & Khelifi, B. (2019). Versioned Executable User Documentation for In-development Science Tools. In *Astronomical Data Analysis Software and Systems XXVIII* (pp. 357–360).

Dembinski, H. P., Arteaga-Velázquez, J. C., Cazon, L., Conceição, R., Gonzalez, J., Itow, Y., ... Zhezher, Y. (2019). Report on Tests and Measurements of Hadronic Interaction Properties with Air Showers. In *EPJ Web of Conferences* (Vol. 210). Les Ulis: EDP Sciences. doi:10.1051/epjconf/201921002004

Dembinski, H. P., Nellen, L., Reininghaus, M., & Ulrich, R. (2019). Technical Foundations of CORSIKA 8: New Concepts for Scientific Computing. In *Proceedings of Science* (Vol. 358).

Dembinski, H. P., Ulrich, R., & Pierog, T. (2019). Future Proton-Oxygen Beam Collisions at the LHC for Air Shower Physics. In *Proceedings of Science* (Vol. 358).

Dwarkadas, V., Marcowith, A., Renaud, M., Tatischeff, V., & Giacinti, G. (2019). Core-collapse Supernovae as Cosmic Ray Sources. In *Proceedings of Science* (Vol. ICRC2019). Madison, Wisconsin,.

Giacinti, G. (2019). Cosmic-Ray Diffusion and Galactic Magnetic Field Models. In *Proceedings of Science* (Vol. ICRC2019). Madison, Wisconsin, USA.

Giacinti, G., Dwarkadas, V., Marcowith, A., & Chiavassa, A. (2019). Numerical Simulations of Cosmic-Ray Acceleration at Core-Collapse Supernovae. In *Proceedings of Science* (Vol. ICRC2019). Madison, Wisconsin.

Giacinti, G., & Lopez Coto, R. (2019). Constraining the Properties of the Interstellar Turbulence around Geminga using HAWC Measurements. In *Proceedings of Science* (Vol. ICRC2019). Madison, Wisconsin.

Giacinti, G., & Kirk, J. G. (2019). Electron Acceleration in the Crab Nebula. In *Proceedings of the "SF2A 2019"*. Jardin-Blicq, A., Marandon, V., & Brun, F. (2019). A complementary view of the Galactic plane in TeV gamma rays by HAWC and H.E.S.S. In *Proceedings of Science* (Vol. ICRC2019). Retrieved from

Joshi, V., & Schoorlemmer, H. (2019). Air shower reconstruction using HAWC and the Outrigger array. In *for the HAWC Collaboration* (Ed.), *Proceedings of Science* (Vol. ICRC 2019).

López-Coto, R., Parsons, R. D., Hinton, J. A., & Giacinti, G. (2019). An undiscovered pulsar in the Local Bubble as an explanation of the local high energy cosmic ray electron spectrum. In *Proceedings of Science* (Vol. ICRC2019).

Mackenroth, F., Kumar, N., Di Piazza, A., Tamburini, M., Neitz, N., & Keitel, C. H. (2019). Nonlinear quantum electrodynamics in ultra-high intensity laser-plasma interactions. In *Proceedings of SPIE* (Vol. 11039). Bellingham, Washington: SPIE. doi:10.1117/12.2525369

Marandon, V., Jardin-Blicq, A., & Schoorlemmer, H. (2019). Latest news from the HAWC outrigger array. In *Proceedings of Science* (Vol. ICRC2019). Retrieved from <http://hdl.handle.net/21.11116/0000-0005-673D-4>

Mitchell, A., Dembinski, H. P., & Parsons, R. D. (2019). Using IACTs to Measure the Profiles of Muons in TeV Air Showers. In *Proceedings of Science* (Vol. 358).

Oelmann, J.-H., Nauta, J., Ackermann, A., Knauer, P., Pappenberger, R., Kühn, S., ... Crespo López-Urrutia, J. R. (2019). Development of an XUV Frequency Comb for Precision Spectroscopy of Highly Charged Ions. In *Conference on Lasers and Electro-Optics Europe & European Quantum Electronics Conference (CLEO/Europe-EQEC)*. doi:10.1109/CLEOE-EQEC.2019.8872682

Pierog, T., Baur, S., Dembinski, H. P., Ulrich, R., & Werner, K. (2019). Collective Hadronization and Air Showers: Can LHC Data Solve the Muon Puzzle ? In *Proceedings of Science* (Vol. 358).

## Books and Book Chapters 2019

Bühler, R., Dravins, D., Egberts, K., Hinton, J. A., & Parsons, R. D. (2019). Capabilities beyond Gamma Rays . In *Science with the Cherenkov Telescope Array* (pp. 291–298). Singapore: World Scientific. doi:10.1142/9789813270091\_0014

CTA Collaboration, & Hinton, J. A. (Eds.). (2019). *Science with the Cherenkov Telescope Array*. Singapore: World Scientific.

Dorn, A. (2019). Electron Impact Spectroscopy. In *Radiation in Bioanalysis* (pp. 313–326). Cham: Springer.

Hinton, J. A., Ong, R. A., & Torres, D. (2019). Introduction to CTA Science. In *Science with the Cherenkov Telescope Array* (pp. 1–25). Singapore: World Scientific. doi:10.1142/9789813270091\_0001

Hinton, J. A., Ong, R. A., & Torres, D. (2019). Core Programme Overview . In *Science with the Cherenkov Telescope Array* (pp. 41–43). Singapore: World Scientific. doi:10.1142/9789813270091\_0003



# Dissertations and Thesis 2017

## Dissertations

Ait Benkhali, F. (2017): Beobachtungen Aktiver Galaktischer Kerne mit den H.E.S.S. Cherenkov-Teleskopen und dem Fermi-LAT im hochenergetischen  $\gamma$ -Bereich und Optimierung des Antriebssystems des HESS II Teleskops. PhD Thesis. Ruprecht-Karls-Universität, Heidelberg.

Aquines Gutiérrez, O. (2017): Inclusive  $V^0$  Production at the LHC. PhD Thesis. Ruprecht-Karls-Universität, Heidelberg.

Brünner, S. (2017): Mitigation of  $^{222}\text{Rn}$  induced background in the XENON1T dark matter experiment. PhD Thesis. Ruprecht-Karls-Universität, Heidelberg.

Edwards, T. C. (2017): Separation of gamma-Ray, Electron and Proton induced Air Showers applied to Diffuse Emission Studies with H.E.S.S. PhD Thesis. Ruprecht-Karls-Universität, Heidelberg.

Hasterok, C. (2017): Gas Purity Analytics, Calibration Studies, and Background Predictions towards the First Results of XENON1T. PhD Thesis. Ruprecht-Karls-Universität, Heidelberg.

Laux, M. (2017): Photoionization in strong laser fields : from atoms to complex molecules. PhD Thesis. Ruprecht-Karls-Universität, Heidelberg.

Mi, Y. (2017): Strong-field ionization of atoms and molecules with two-color laser pulses. PhD Thesis. Ruprecht-Karls-Universität, Heidelberg.

Rauch, F. L. (2017): From Final Dark Matter Results and Background Shape Uncertainties in XENON100 to First Light in XENON1T. PhD Thesis. Ruprecht-Karls-Universität, Heidelberg.

Schmöger, L. (2017): Kalte hochgeladene Ionen für Frequenzmetrologie. PhD Thesis. Ruprecht-Karls-Universität, Heidelberg.

Sun, X. (2017): Nonthermal Processes of Fast Outflows from Astrophysical Objects. PhD Thesis. Ruprecht-Karls-Universität, Heidelberg.

Wagner, V. (2017): Pulse Shape Analysis for the GERDA Experiment to Set a New Limit on the Half-life of  $0\nu\beta\beta$  Decay of  $^{76}\text{Ge}$ . PhD Thesis. Ruprecht-Karls-Universität, Heidelberg.

Wang, K. (2017): The High-energy Emission of GRBs and the Propagations of Ultrahigh Energy Cosmic Rays. PhD Thesis. Nanjing University, Nanjing.

Wegmann, A. (2017): Characterization of the liquid argon veto of the Gerda experiment and its application for the measurement of the  $^{76}\text{Ge}$  half-life. PhD Thesis. Ruprecht-Karls-Universität, Heidelberg.

Welter, J. M. R. (2017): Phenomenology of neutrino magnetic moments. PhD Thesis. Ruprecht-Karls-Universität, Heidelberg.

## Master and Bachelor Thesis

Ackermann, A. (2017): Modellierung und Charakterisierung eines Kompressors für ultrakurze Laserpulse durch Strahlenverfolgung. Bachelor's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Bogen, S. (2017): Laserspektroskopie des  $1s^2 2s^2 2p^2 P_{3/2} \rightarrow ^2P_{1/2}$  M1-Übergangs in sympathetisch gekühlten  $Ar^{13+}$ -Ionen. Bachelor's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Borisova, G. D. (2017): Theoretical and Experimental Studies of XUV Multielectron (Auto-)Ionization Dynamics in Helium and Molecular Hydrogen. Master's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Botsi, S. (2017): Isotopic shift measured with a spin-orbit wave packet. Master's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Dickopf, S. (2017): Berechnungen zu den Magnetfeldkorrekturspulen am THe-Trap-Experiment. Bachelor's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Dietrich, K. (2017): Entwicklung einer Multiplexer Box für Radiofrequenzsignale und Simulation von Radiofrequenzanregungen in der PENTATRAP-Falle. Bachelor's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Djendjur, D. (2017): Projekt TrapRemi - Aufbau und erste Charakterisierung der Zajfman-Falle. Bachelor's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Endres, L. (2017): Polarisation Assisted Amplitude Gating. Bachelor's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Erlewein, S. (2017): Trapping of gold anions in a linear Paul trap. Master's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Gan, H. (2017): Nuclear reactions in astrophysical plasmas. Master's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Gernandt, P. S. (2017): The Neutronless Double Beta Decay at the LHC : Analyzing the Lambda-Diagram. Master's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Heinen, L. (2017): Setup and Characterization of a Single-Focused Beam Optical Trap for Lithium. Bachelor's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Hensel, C. (2017): Zeeman-resolved spectroscopy of the coronal optical lines of Fe ions. Bachelor's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Hoibl, L. (2017): Design und Simulation der Ionenstrahlführung im Projekt TrapRemi. Bachelor's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Ivanovic, A. (2017): Experimental observation of ultrashort laser pulse effects on the autoionization dynamics of argon atoms. Master's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Jäger, J. (2017): Untersuchung von metastabilen Zuständen hochgeladener Ruthenium-Ionen mittels EUV-Spektroskopie. Bachelor's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Jiménez Tejero, D. (2017): Pseudoscalar Inflation, Baryogenesis and Gravitational Waves. Master's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Jörg, F. (2017): Investigation of coating-based radon barriers and studies towards their applicability in liquid xenon detectors. Master's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Karthein, J. (2017): Precision mass measurements using the Phase-Imaging Ion-Cyclotron-Resonance-

detection technique. Master's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Kilinc, J. (2017): Charakterisierung der nichtlinearen Pulspropagation in einer gasgefüllten Hohlleiter. Bachelor's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Klett, S. E. (2017): Evolution of the Energy Calibration Coefficients in the Stereo Experiment. Bachelor's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Kraemer, S. (2017): Towards Laser Cooling of Beryllium Ions at the Alphas Trap Experiment. Master's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Kühn, S. (2017): Inbetriebnahme und Charakterisierung einer Elektronenkanone mit optischem Zugang zur Strahlachse in einer kompakten Elektronenstrahlionenfalle. Master's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Lauble, F. (2017): Practical Criterion for Single-Photon Entanglement at X-Ray Energies. Master's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Lindenblatt, H. C. (2017): Resonant Multi-Photon Ionization Experiments on Neon Monomers and Dimers Augmented by Pulse Intensity and Wavelength Diagnostics. Master's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Marie, P. (2017): Optical spectroscopy of highly charged ruthenium ions with astrophysical interest. Bachelor's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Ramien, G. N. (2017): Generation and Control of X-ray Frequency Combs Through Periodic Photon Manipulation. Bachelor's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Rauch, J. (2017): Montage und Charakterisierung eines hochauflösenden optischen Spektrometers zur Vermessung verbotener optischer Übergänge in hochgeladenen Ionen an der Heidelberger Elektronenstrahl-Ionenfalle. Bachelor's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Rimmler, M. M. (2017): Operating a low-energy Electron Cooler at the Cryogenic Storage Ring CSR. Master's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Rink, T. (2017). Leptonic CP violation in the minimal type-I seesaw model : Bottom-up phenomenology & top-down model building. Master's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Rosner, M. (2017): The CANREB Electron Beam Ion Source : Laser Ion Source and Beam Line Assembly. Bachelor's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Sailer, T. (2017): A Laser Ion Source for the Alphas Trap Experiment. Master's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Schierhuber, T. (2017): Ultra-Low Background Germanium Spectroscopy : Commissioning an experimental shielding for a future neutrino experiment. Master's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Schweiger, C. (2017): Construction and commissioning of a room-temperature electron beam ion trap and development of a wire probe injection system. Master's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Sdeo, K. (2017, March 3). Visualization and Simulation of Laser-Induced Fullerene Fragmentation. Master's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Shobeiry, F. (2017): Time-Resolved Study of Double-Ionization of Atoms. Master's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Stegmann, J. (2017): Gravitationswellen von Kernkollaps-Supernovae. Bachelor's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Walter, H. (2017): Analyse von NMR-Daten aus dem Magneten von THe-Trap. Bachelor's Thesis. Ruprecht-Karls-Universität, Heidelberg.

# Dissertations and Thesis 2018

## Dissertations

Angioi, A. (2018): Multi-Particle Effects in Strong-Field Quantum Electrodynamics. PhD Thesis. Ruprecht-Karls-Universität, Heidelberg.

Bhadoria, S. (2018): Laboratory Astrophysics and Ion Acceleration Using Intense Lasers . PhD Thesis. Ruprecht-Karls-Universität, Heidelberg.

Bilous, P. (2018): Towards a nuclear clock with the  $^{229}\text{Th}$  isomeric transition. PhD Thesis. Ruprecht-Karls Universität, Heidelberg.

Campos Vidal, M. D. (2018): Phenomenology and Models of Dark Matter and Neutrinos. PhD Thesis. Ruprecht-Karls-Universität, Heidelberg.

Cerchiari, G. (2018): Laser spectroscopy of La- and anion trapping with a view to laser cooling. PhD Thesis. Ruprecht-Karls-Universität, Heidelberg.

Daněk, J. (2018): Coulomb effects in the dipole and nondipole regimes of strong-field ionization. PhD Thesis. Ruprecht-Karls-Universität, Heidelberg.

Ding, T. (2018): Quantum dynamics in weak and strong fields measured by XUV nonlinear spectroscopy. PhD Thesis. Ruprecht-Karls-Universität, Heidelberg.

Donath, A. (2018): The Galactic Gamma-ray Source Population between 10 GeV and 50 TeV. PhD Thesis. Ruprecht-Karls-Universität, Heidelberg.

Helmboldt, A. (2018): New insights into modified scalar sectors and exotic Higgs decays. PhD Thesis. Ruprecht-Karls-Universität, Heidelberg.

Hossen, K. (2018): Kinematically complete experiments for electron induced break-up of small molecules and clusters. PhD Thesis. Universidade de Santiago de Compostela, Santiago de Compostela, Spain.

King, J. (2018): Hochenergetische Gammastrahlung aus dem Galaktischen Zentrum. PhD Thesis. Ruprecht-Karls-Universität, Heidelberg.

Lyu, C. (2018): Narrow-band hard-X-ray lasing. PhD Thesis. Ruprecht-Karls-Universität, Heidelberg.

Meyer, C. (2018): The lowest rotational quantum states of hydroxyl anions probed by electron photo detachment in a cryogenic storage ring. PhD Thesis. Ruprecht-Karls-Universität, Heidelberg.

Pürckhauer, S. S. (2018): Characterising light concentrators for CTA and optimising the data selection to improve angular resolution and sensitivity. PhD Thesis. Ruprecht-Karls-Universität, Heidelberg.

Rischka, A. (2018): The First Direct QEC Measurement in  $^{163}\text{Ho}$  and the Development of the High-Precision Mass Spectrometer PENTATRAN for Neutrino Physics. PhD Thesis. Ruprecht-Karls-Universität, Universität.

Schmid, G. (2018): Two-Color Pump-Probe Experiments on Small Quantum Systems at the Free-Electron Laser in Hamburg. PhD Thesis. Ruprecht-Karls-Universität, Heidelberg.

Sikora, B. (2018): Quantum field theory of the g-factor of bound systems. PhD Thesis. Ruprecht-Karls-Universität, Heidelberg.

Stoß, V. (2018): Strong-Field Spectroscopy : From Absorption to Time-Resolved Dynamics in Strong Fields. PhD Thesis. Ruprecht-Karls-Universität, Heidelberg.

Tang, S. (2018): Plasma High Harmonic Generation and Single Attosecond Pulse Emission from Ultraintense Laser Pulses. PhD Thesis. Ruprecht-Karls-Universität, Heidelberg.

## Master and Bachelor Thesis

Borras, H. W. H. (2018). Determination of the angular distribution of cosmic ray muons and development of a low-cost silicon detector. Bachelor's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Breidenbach, S. (2018). Hadronic vacuum polarization in atoms. Bachelor's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Da Costa Castanheira, C. (2018). Towards multidimensional spectroscopy experiments in the XUV. Master's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Elsing, D. (2018). Plasma screening effects in laser-generated plasmas. Bachelor's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Gleixner, F. (2018). Parametric instabilities of short and ultra-intense laser pulses in a plasma. Bachelor's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Herrero Gómez, P. (2018). Investigation of surface cleaning procedures for the removal of radon daughters from PTFE surfaces and their applicability in liquid xenon detectors. Master's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Hörl, J. (2018). Simulation of ion-neutral merged beams experiments at the Cryogenic Storage Ring. Master's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Kaap, F. (2018). Plasma-induzierte Blauverschiebung während der Erzeugung Hoher Harmonischer. Bachelor's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Magunia, A. (2018). Doubly-Excited Helium Strongly Driven with Short and Long Wavelength Pulses. Master's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Müller, M. (2018). Entwicklung von Kryoelektronik für den Nachweis einzelner Ionen im PENTATRAP-Penningfallen-Massenspektrometer. Bachelor's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Nüsslein, F. (2018). An experimental setup for testing ion beam sources for the CSR facility. Master's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Schmidt, V. C. (2018). Design of an ion beam extraction optics and analysis of the molecular composition of an ion beam in an electrostatic storage ring. Bachelor's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Scholer, O. (2018). Neutrinomassenbestimmung anhand von Kurzzeitcharakteristika galaktischer Supernovae. Bachelor's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Spaniol, S. (2018). Electron Transport System for Fast-Timing-Readout at a Micro-Calorimeter Particle Detector. Bachelor's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Spieß, L. J. (2018). Setup of a vibration-suppressed cryogenic system for a RF ion trap with minimum micromotion. Master's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Steinsberger, T. (2018). Microwave injection for the ALPHATRAP experiment and developments of the multi-reflection time-of-flight technique of the ISOLTRAP experiment. Master's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Weegen, M. (2018). Multiphoton Ionisation of Lithium from an optical Dipole Trap. Master's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Winkler, D. (2018). Characterization of a HPGe Coaxial Well Detector for Low Energy Gamma Spectroscopy & Sensitivity Analysis of Germanium Spectrometers. Bachelor's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Winter, R. (2018). Low-energy extreme-ultraviolet spectroscopy of Ru IV to Ru VIII using an electron beam ion trap. Bachelor's Thesis. Ruprecht-Karls-Universität, Heidelberg.

## Habilitations, Dissertations and Thesis 2019

### Habilitation

Oreshkina, N. S. (2019): Quantum electrodynamic and nuclear effects in the spectra of highly charged ions. Habilitation Thesis. Ruprecht-Karls-Universität, Heidelberg.

### Dissertations

Arapoglou, I. (2019): First measurement of the ground-state g-factor of boronlike argon  $^{40}\text{Ar}^{13+}$  in Alphatrap. PhD Thesis. Ruprecht-Karls-Universität, Heidelberg.

Bragin, S. (2019): Front-form approach to quantum electrodynamics in an intense plane-wave field with an application to the vacuum polarization. PhD Thesis. Ruprecht-Karls-Universität, Heidelberg.

Castrignano, S. (2019): A Quantum Theoretical Approach to Hard X-ray Time-Domain Interferometry. PhD Thesis. Ruprecht-Karls-Universität, Heidelberg.

Dobrodey, S. (2019): Charge-exchange studies of bare and hydrogen-like low-Z ions in the X-ray and extreme-ultraviolet ranges inside an electron beam ion trap. PhD Thesis. Ruprecht-Karls-Universität, Heidelberg.

Filianin, P. (2019): Measurements of low decay energies of beta-processes using Penning traps. PhD Thesis. Ruprecht-Karls-Universität, Heidelberg.

Jardin-Blicq, A. (2019): The TeV  $\gamma$ -ray emission of the Galactic Plane : HAWC and H.E.S.S. observations of the Galactic Plane and detailed study of the region surrounding 2HWC J1928+177. PhD Thesis. Ruprecht-Karls-Universität, Heidelberg.

Joshi, V. (2019): Reconstruction and Analysis of Highest Energy  $\gamma$ -Rays and its Application to Pulsar Wind

Nebulae. PhD Thesis. Ruprecht-Karls-Universität, Heidelberg.

Katsoulakos, G. (2019): Nonthermal Processes Near Supermassive Black Holes. PhD Thesis. Ruprecht-Karls-Universität, Heidelberg.

Liu, Y. (2019): Two-Color Pump-Probe Experiments on O<sub>2</sub> and N<sub>2</sub> at the Free-Electron Laser in Hamburg. PhD Thesis. Ruprecht-Karls-Universität, Heidelberg.

Michel, N. (2019): Relativistic theory of nuclear structure effects in heavy atomic systems. PhD Thesis. Ruprecht-Karls-Universität, Heidelberg.

Nickerson, B. S. (2019): Towards coherent control of the <sup>229</sup>Th isomeric transition in VUV-transparent crystals. PhD Thesis. Ruprecht-Karls-Universität, Heidelberg.

Platscher, M. E. L. (2019): Phenomenology of massive spin-2 fields. PhD Thesis. Ruprecht-Karls-Universität, Heidelberg.

Roca Catalá, C. (2019): Optimization of the simulation framework in the Stereo Experiment to characterize the detector response and optical properties of the liquid scintillators. PhD Thesis. Ruprecht-Karls-Universität, Heidelberg.

Saurabh, S. (2019): Collision studies with internally cold ion beams and merged electron beams in a cryogenic storage ring. PhD Thesis. Ruprecht-Karls-Universität, Heidelberg.

Schuh, M. (2019): Simulations of the image charge effect in high-precision Penning traps and the new IGISOL ion buncher. PhD Thesis. Ruprecht-Karls-Universität, Heidelberg.

Schüssler, R. X. (2019): First High-Precision Mass Measurements at PENTATRAP on highly charged Xe and Re ions. PhD Thesis. Ruprecht-Karls-Universität, Heidelberg.

Segal, T. (2019): Mass Measurements of Neon Isotopes at THE-Trap. PhD Thesis. Ruprecht-Karls-Universität, Heidelberg.

Weigel, A. (2019): Detection Electronics Design and First Observation of Bound-Electron Spin Transitions at the ALPHATRAP g-Factor Experiment. PhD Thesis. Ruprecht-Karls-Universität, Heidelberg.

Wilhelm, P. (2019): First Studies of Low-Energy Electron Cooling of keV Energy Ion Beams at the Electrostatic Cryogenic Storage Ring CSR. PhD Thesis. Ruprecht-Karls-Universität, Heidelberg.

## Master and Bachelor Thesis

Ackermann, A. (2019): Development and characterization of a femtosecond-pulse compressor. Master's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Altmann, D. (2019): Inbetriebnahme eines gepulsten Gasinjektionssystems für Ladungsaustauschmessungen von O<sup>8+</sup> und O<sup>7+</sup> mit H<sub>2</sub> in einer Elektronenstrahl-Ionenfalle. Bachelor's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Amberg, S. (2019): Setup and characterization of a hollow core fiber waveguide for transient absorption experiments with short wavelength infrared pulses. Bachelor's Thesis. Ruprecht-Karls-Universität, Heidelberg.



- Bogen, S. (2019): Frequenz-, Leistungs- und Positionsstabilisierung von UV-Lasersystemen für Frequenzmetrologie mit hochgeladenen Ionen. Master's Thesis. Ruprecht-Karls-Universität, Heidelberg.
- Engelfried, L. (2019): Ion acceleration in laser-plasma interaction. Bachelor's Thesis. Ruprecht-Karls-Universität, Heidelberg.
- Gerharz, M. L. (2019): Dynamical polarization control in X-ray quantum optics. Bachelor's Thesis. Ruprecht-Karls-Universität, Heidelberg.
- Herkommer, B. (2019). Measuring the energy spectra of unknown samples using coherent control of the complex phase of X-rays. Master's Thesis. Ruprecht-Karls-Universität, Heidelberg.
- Hersch, M. (2019): A 5d Linear Dilaton Braneworld : Dark Matter from the Gravitationally Sterilised Standard Model. Master's Thesis. Ruprecht-Karls-Universität, Heidelberg.
- Hübner, M. (2019): Temperature stabilization of the ultra-stable voltage source StaReP for the Alphatrap experiment. Bachelor's Thesis. Ruprecht-Karls-Universität, Heidelberg.
- Jaramillo Gracia, C. F. (2019): WIMPs and sterile neutrinos as dark matter. Master's Thesis. Karlsruher Institut für Technologie, Karlsruhe.
- Klein, C. (2019): Minimal radiative neutrino mass : a systematic study. Master's Thesis. Ruprecht-Karls-Universität, Heidelberg.
- Knauer, P. (2019): Stabilisation of Thermal Drifts in a Femtosecond Enhancement Cavity. Bachelor's Thesis. Ruprecht-Karls-Universität, Heidelberg.
- König, C. M. (2019): In-trap Laser Desorption in an EBIT for the Production of Highly Charged Ions of Rare Isotopes at Pentatrap. Master's Thesis. Ruprecht-Karls-Universität, Heidelberg.
- Kromer, K. (2019): Environmentally-induced systematic effects at the high-precision mass spectrometer PENTATRAP. Master's Thesis. Ruprecht-Karls-Universität, Heidelberg.
- Krummeich, J. (2019). Development of a cooling system for mirrors in an UHV chamber. Bachelor's Thesis. Ruprecht-Karls-Universität, Heidelberg.
- Kuntz, J. (2019). Gauge Theories of Conformal Gravitation. Master's Thesis. Ruprecht-Karls-Universität, Heidelberg.
- Lange, D. (2019): Untersuchung des Dip-Fit-Algorithmus zur Bestimmung der Axialfrequenz beim Hochpräzisions-Massenspektrometer PENTATRAP. Bachelor's Thesis. Ruprecht-Karls-Universität, Heidelberg.
- Lecher, M. (2019): Exploring the applicability of electro deposited copper for reducing the radon background in liquid xenon detectors. Bachelor's Thesis. Ruprecht-Karls-Universität, Heidelberg.
- Leidel, V. (2019). Laser scattering calculations in pair producing plasmas. Bachelor's Thesis. Ruprecht-Karls-Universität, Heidelberg.
- Lukezic, N. (2019): Low-Noise Charge Amplifier for the LEGEND-200 Cooperation. Bachelor's Thesis. Hochschule Karlsruhe Technik und Wirtschaft, Karlsruhe.
- Meinhold, T. A. (2019): Stabilised laser-driven radiation pressure acceleration of ions. Bachelor's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Podszus, T. (2019): On the High-Energy Behaviour of Strong-Field QED in an Intense Plane Wave. Master's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Rockenstein, S. (2019). Active Carrier-Envelope Phase Stabilisation of Ultrashort Laser Pulses. Bachelor's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Rosner, M. K. (2019). Production and preparation of highly charged ions for re-trapping in ultra-cold environments. Master's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Schneider, A. (2019): Design of the Analysis Trap and He Ion Source for the  $^3\text{He}^{2+}$  magnetic moment measurement. Master's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Togawa, M. (2019): Resonante Anregung der  $1s - nl$ -Übergänge in He- und Li-artigen Sauerstoffionen mittels weicher Röntgenstrahlung bei PETRA III : Experiment und Theorie. Bachelor's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Warnecke, C. (2019): Imaging of Coulomb crystals in a cryogenic Paul trap experiment. Master's Thesis. Ruprecht-Karls-Universität, Heidelberg.

Zebergs, I. (2019): Charakterisierung der Ionenspeicherung im Projekt TrapRemi. Bachelor's Thesis. Ruprecht-Karls-Universität, Heidelberg.

# Invited Talks 2017

## At Conferences and Symposia

Assergi, Italy, LNGS, Recent Developments in Neutrino Physics and Astrophysics (04.-07.09.2017)

**Smirnov, A. Y.:**

*Concluding Remarks.*

Aussois, France, IWP-RIXS-2017, International Workshop on Photoionization & Resonant Inelastic X-ray Scattering (26.-31.03.2017)

**Pfeifer, T.:**

*Observing atoms and molecules change their shape in short and strong laser fields.*

Bad Honnef Physikzentrum, Germany, 4<sup>th</sup> KAT strategy meeting (07.-08.12.2017)

**Maneschg, W.:**

*Low energy neutrino physics: Review of solar neutrinos & Outlook on Coherent Neutrino Nucleus Scattering.*

Bad Honnef, Germany (19.09.2017)

**Crespo López-Urrutia, J. R.:**

*Thorium in high charge states: new opportunities for nuclear clocks?*

Bad Honnef, Germany, KET Jahresversammlung (10.-11.11.2017)

**Schmelling, M.:**

*Physik Highlights der LHC Experimente.*

Bad Honnef, Germany, Physikzentrum, KHuK Annual Meeting 2017 (01.12.2017)

**Blaum, K.:**

*Bericht zu ISOLDE.*

Beijing, China, 40th Anniversary of cooperation between IMP and GSI (05.09.2017)

**Blaum, K.:**

*Precision Measurements of Fundamental Properties of Atoms and Nuclei.*

Belfast, United Kingdom, 44<sup>th</sup> EPS Conference on Plasma Physics (26.-30.06.2017)

**Di Piazza, A.:**

*Opportunities in high-field classical and quantum electrodynamics using high-power lasers. (plenary talk)*

Bergen, Norway, 12th International Workshop on High-pT Physics for the RHIC and LHC Era (02.-05.10.2017)

**Schmelling, M.:**

*J/psi production in LHCb.*

*Forward Physics with LHCb.*

Berlin, Germany, 2<sup>nd</sup> International Conference on Quantum Physics and Quantum Technology (25.-26.09.2017)

**Pálffy-BuB, A.:**

*X-ray quantum optics.*

Berlin, Germany, MPG Meeting of CPTS Section (26.10.2019)

**Sturm, S.:**

*Precision measurements of the magnetic moment of highly charged ions and determination of fundamental constants.*

Bern, Switzerland, ISSI workshop "The Physics of the Very Local Interstellar Medium and its Interaction with the Heliosphere" (08.-11.05.2017)

**Giacinti, G.:**

*Cosmic-Ray Anisotropy as a Probe of local Interstellar Turbulence.*

Blois, France, 29th Rencontres de Blois - Particle Physics and Cosmology (28.05.-02.06.2017)

**Lindner, M.:**

*Conference Summary.*

**Rodejohann, W.:**

*Lepton Number Violation.*

Bonn, Deutschland, Labor-Astrophysik Meeting, MPI für Radioastronomie (30.11.2017)

**Kreckel, H.:**

*Laboratory studies of interstellar gas phase water formation.*

Bonn, Int. Workshop on Beam Cooling, COOL17 (18.-22.09.2017)

**Wilhelm, P.:**

*Electron cooling of bunched ion beams and recent results at the Heidelberg cryogenic storage ring (CSR).*

Bordeaux, France, NUCAR collaboration meeting (06.-08.03.2017)

**Grieser, M.:**

*A new storage ring for ISOLDE.*

- Brazil, ICTP-SAIFR, I South American workshop on Dark Matter (06.2017)  
**Queiroz, F.:**  
*A Step Towards the Nature of Dark Matter with Direct Detection Experiments.*
- Brisbane, Australia, 4<sup>th</sup> ISWAMP (Intense Field, Short Wavelength Atomic and Molecular Processes) (22.-24.07.2017)  
**Ott, C.:**  
*Bound-state electron dynamics in weak and strong fields.*
- Brussels, Belgium, Solvay workshop on “Beyond the Standard model with Neutrinos and Nuclear Physics” (29.11.-01.12.2017)  
**Lindner, M.:**  
*Neutrinoless double beta decay and new physics.*
- Budapest, Hungary, 14<sup>th</sup> ICOMP (International Conference on Multiphoton Processes) (24.-27.09.2017)  
**Camus, N.:**  
*Experimental evidence for Wigner's tunneling time.*  
**Ott, C.:**  
*Time-resolved XUV absorption spectroscopy of correlated electron dynamics in weak and strong fields.*
- Busan, Korea, 35<sup>th</sup> International Cosmic Ray Conference ICRC 2017 (12.-20.07.2017)  
**Zanin, R.:**  
*Gamma-ray emission from Pulsars and their environment.*
- Cairns, Australia, Int. Conf. on the Physics of Photonic, Electronic and Atomic Collisions (ICPEAC XXX) (26.07.-01.08.2017)  
**Pfeifer, T.:**  
**Tutorial: Shaping atoms and molecules with strong laser fields.**  
**Blättermann, A.:**  
*Observing the ultrafast buildup of a Fano resonance.*  
**Dorn, A.:**  
*Electron Impact Ionization of Molecules and Clusters.*  
**Novotný, O.:**  
*Internally cold ions in the Cryogenic Storage Ring.*
- Cambridge, MA, USA, Table-Top Experiments with Skyscraper Reach, Workshop at MIT (09.-11.08.2017)  
**Blaum, K.:**  
*Precision Tests of Fundamental Interactions and their Symmetries with cooled and stored exotic ions.*
- Cancun, Mexico, Femtochemistry Conference (FEMTO 13) (13.-17.08.2017)  
**Pfeifer, T.:**  
*Atoms and Molecules Changing Shape in Strong Laser Fields — Observed by Attosecond XUV Spectroscopy and Femtosecond X-Ray Imaging.*
- Cargèse, Corsica, France, Precision physics, quantum electrodynamics and fundamental interactions (29.04.-05.05.2017)  
**Harman, Z.:**  
*Fundamental studies with highly charged ions.*
- Cargèse, Italy, Precision Physics, Quantum Electrodynamics and Fundamental Interactions 2017 (01.05.2017)  
**Sturm, S.:**  
*Testing strong field QED via the magnetic moment of highly charged ions.*
- Catania, Italy, Conference on Neutrino and Nuclear Physics (CNNP2017) (21.-25.10.2017)  
**Blaum, K.:**  
*Precision Nuclear Mass Measurements: Present and Future for Nuclear Structure, Astrophysics and Neutrino Physics Studies.*  
**Lindner, M.:**  
*The CONUS coherent Neutrino scattering Experiment.*  
**Smirnov, A. Y.:**  
*Theory of neutrino masses and mixing.*
- Chişinău, Moldova, Humboldt Kolleg: an open workshop on “Multidisciplinarity in Modern Science for the Benefit of Society” (20.-22.09.2017)  
**Keitel, C. H.:**  
*X-ray quantum control with highly charged ions and nuclei. (plenary talk)*
- Darmstadt, Germany EMMI Physics Days at GSI (28.11.2017)  
**Köhler-Langes, F.:**  
*A new experiment for high-precision measurements of light atomic masses - First results on the mass of the proton.*
- Darmstadt, Germany, APPA R&D Collaboration Meeting at GSI Darmstadt (12.01.2017)  
**Novotný, O.:**  
*First experiments with the cryogenic electrostatic storage ring CSR.*

- Darmstadt, Germany, ILIMA Open Meeting 2017 (28.02.2017)  
**Gunst, J.:**  
*Nuclear excitation by electron capture in laser-generated plasmas.*
- Darmstadt, Germany, NUSTAR annual meeting at GSI (02.03.2017)  
**Schwenk, A.:**  
*Medium-mass nuclei from nuclear forces. (plenary talk)*
- Dresden, Germany, Atomic Physics 2017 (26.11.-01.12.2017)  
**Moshhammer, R.:**  
*From Tunneling Times to Atomic Spectroscopy: Experiments with Reaction Microscopes.*
- Dresden, Germany, DPG spring meeting (19.-24.03.2017)  
**Pfeifer, T.:**  
*Attosecond control of excited electrons and nuclei in gas- and condensed-phase systems.*
- Dresden, Germany, ELI German Scientific Community Workshop (29.-30.06.2017)  
**Ott, C.:**  
*Gas phase XUV absorption spectroscopy in weak and strong fields.*
- Dresden, Germany, Quantum Memory from Quantum Dynamics (15.-17.06.2017)  
**Evers, J.:**  
*Nuclear quantum dynamics with x-rays.*  
**Hatsagortsyan, K. Z.:**  
*Tunneling time delay in strong field ionization.*  
**Keitel, C. H.:**  
*Foundations of Extreme Laser-Matter Interaction.*
- Dubai, United Arab Emirates, FTAPS Frontiers in theoretical and applied physics, (22.-25.02.2017)  
**Moshhammer, R.:**  
*Atomic and Molecular Fragmentation in Intense XUV and IR Laser Fields.*
- Durham, UK, 49th EGAS Conference (17.-21.07.2017)  
**Wolf, A.:**  
*Fast Ion Beams Stored in Cryogenic Low-Density Environment: Collisions and Internal Excitations.*
- Easton, USA, Gordon Research Conference: Frontier Science with Forefront Synchrotrons and XFEL Sources, Stonehill College, (30.07.-04.08.2017)  
**Schnorr, K.:**  
*Imaging Strong-Field Induced Dynamics in C60 via X-Ray Scattering.*
- Edinburgh, Scotland, Workshop: Fullerenes in Space 2017 (29.04.2017)  
**Kreckel, H.:**  
*Toward gas phase spectroscopy of fullerenes and complex organic ions in a cryogenic ion trap.*
- Erice, Italy, International School of Nuclear Physics 39th Course (16.-24.09.2017)  
**Buck, C.:**  
*Short baseline neutrino oscillation experiments at nuclear reactors.*
- Florence, Italy, GGI Workshop "Collider and Cosmos" (28.08.-06.10.2017)  
**Arcadi, G.:**  
*WIMP Dark Matter and Portals.*
- Fort Lauderdale, USA, 49th Annual Meeting of the APS Division of Atomic, Molecular and Optical Physics APS Meeting (28.05.-01.06.2018)  
**Crespo López-Urrutia, J. R.:**  
*Fundamental studies using VUV and EUV frequency metrology with highly charged ions.*
- Freiburg, Germany, FRIAS Conference: Beyond molecular movies: Bringing time-domain spectroscopy to diffraction imaging (13.-15.09.2017)  
**Pfeifer, T.:**  
*Understanding Atoms and Molecules in Strong Laser Fields using Attosecond XUV Spectroscopy and Femtosecond X-Ray Imaging.*
- Garching, Germany, ESO Conference "Reaching New Heights in Astronomy" (28.-30.08.2017)  
**Hofmann, W.:**  
*Astronomy at the highest photon energies.*
- Geneva, CERN, Switzerland, Workshop "Neutrinos: the quest for a new physics scale" (27.-31.03.2017)  
**Smirnov, A. Y.:**  
*Flavor symmetries: Introduction.*

- Geneva, Switzerland, 17<sup>th</sup> International Conference on Ion Sources (15.-20.10.2017)  
**Crespo López-Urrutia, J. R.:**  
*Design and test of the CANREB-EBIS.*
- Guadalajara, Jalisco, Mexico; 4th "Cosmic Ray Anisotropy Workshop" (CRA 2017) (10.-13.10.2017)  
**Giacinti, G.:**  
*TeV-PeV Cosmic-Ray Anisotropy as a New Probe of the Interstellar Turbulence.*
- Guangzhou, China, XXVIII International Symposium on Lepton Photon Interactions at High Energies (07.-12.08.2017)  
**Schwingerheuer, B.:**  
*Neutrinoless double beta decay and absolute neutrino mass measurements.*
- Halong, Vietnam, Int. Symposium on Physics of Unstable Nuclei 2017 (ISPUN17) (25.-30.09.2017)  
**Blaum, K.:**  
*Precision Nuclear Masses and their Importance for Nuclear Structure, Astrophysics and Fundamental Studies.*
- Hamburg, DESY, Physics seminar (25.-26.10.2017)  
**Marrodán Undagoitia, T.:**  
*First results from the XENON1T dark matter experiment.*
- Hamburg, Germany, DESY Theory Workshop 2017 (26.-29.09.2017)  
**Platscher, M.:**  
*Gravitational Wave Oscillations in Bigravity.*
- Hamburg, Germany, European XFEL / DESY Photon Science Users' Meeting (25.-27.01.2017)  
**Ott, C.:**  
*Absorption Spectroscopy and Control of Correlated Electron Dynamics in Small Quantum Systems.*
- Hamburg, Germany, Timing Experiments at PETRA IV (27.-29.03.2017)  
**Evers, J.:**  
*Time-resolved nuclear quantum optics.*
- Heidelberg, Germany, Higgs Couplings 2017 (06.-10.11.2017)  
**Helmboldt, A.:**  
*Prospects for three-body Higgs decays into extra light scalars.*
- Heidelberg, Germany, HighRR Workshop: Vistas on Detector Physics (11.12.2017)  
**Hasterok, C.:**  
*Gas Purity Analytic Methods in XENON1T.*
- Heidelberg, Germany, Joint KAT-KET-HHUK Workshop on 'The Future of Neutrino Physics' (23.-24.02.2017)  
**Maneschg, W.:**  
*Coherent Elastic Neutrino Nucleus Scattering.*
- Heidelberg, Germany, nuClock Consortium Meeting, MPIK, Heidelberg, September 2017 (18.-19.09.2017)  
**Crespo López-Urrutia, J. R.:**  
*Thorium in high charge states: new opportunities for nuclear clocks?*  
**Eliseev, S.:**  
*What could Penning-Trap Mass Spectrometry do for nuClock?*
- Heidelberg, Germany, Workshop on 'Flavour and Dark Matter' (26.09.2017)  
**Goertz, F.:**  
*Axiflavor Theory.*  
**Queiroz, F.:**  
*Dark Matter in Two Higgs Doublet Models.*
- Hirschegg, Austria, Neutron star mergers: From gravitational waves to nucleosynthesis (15.-21.01.2017)  
**Blaum, K.:**  
*Precision Mass Measurements for Nuclear Astrophysics and Neutrino Physics Studies.*
- Ilmenau, Germany, 21. Deutsche Physikerinnentagung (28.-01.10.2017)  
**Pálffy-Buß, A.:**  
*Laser-matter interaction in the x-ray regime. (plenary talk)*
- Irvine, CA, USA, WIN 2017 (19.-23.06.2017)  
**Platscher, M.:**  
*Connecting lepton flavor violation and the muon anomalous magnetic moment.*  
**Xu, X.:**  
*Distinguishing between Dirac and Majorana neutrinos in the presence of general interactions.*
- Jerusalem, Israel, High Energy Astrophysics Workshop (28.02.2017)  
**Aharonian, F.:**  
*Scientific objectives of high energy gamma-ray Astronomy.*

- Kazan, Russia, The 26<sup>th</sup> Annual International Laser Physics Workshop (LPHYS'17) (17.-21.07.2017)  
**Bauke, H.:**  
*Electrons in Strong Electromagnetic Fields: Spin Effects and Radiation Reaction.*  
**Cavaletto, S. M.:**  
*Reconstruction and Control of Strong-Field-Excited Quantum Dynamics.*  
**Hatsagortsyan, K. Z.:**  
*Under-the-barrier recollisions in strong field ionization.*  
*Limits of Strong Field Rescattering in the Relativistic Regime.*  
**Keitel, C. H.:**  
*Relativistic quantum dynamics and quantum electrodynamics with super strong laser pulses.*  
*X-ray quantum control with highly charged ions and nuclei.*  
**Tamburini, M.:**  
*Laser-Pulse-Shape Control of Seeded QED Cascades.*
- Kreuth, Germany, Ringberg Workshop on Science with FELs (05.02.2017)  
**Schnorr, K.:**  
*Imaging Strong-Field Induced Dynamics in C60 via X-Ray Scattering.*
- Kreuth, Schloss Ringberg, Germany, Retreat of the Laser Spectroscopy Division of the Max Planck Institute of Quantum Optics (28.08.-01.09.2017)  
**Blaum, K.:**  
*Measuring the World - Precision Measurements of Fundamental Properties of Atoms and Nuclei.*
- La Thuile, Italy, 52nd Rencontres de Moriond: "Electroweak Interactions and Unified Theories" (18.-25.03.2017)  
**Viana, A.:**  
*Indirect Searches for Dark Matter signals with H.E.S.S.*
- La Thuile, Italy, 52nd Rencontres de Moriond: "Very High Energy Phenomena in the Universe" (18.-25.03.2017)  
**Marandon, V.:**  
*An overview of the TeV Galactic sources.*  
**Marrodán Undagoitia, T.:**  
*Dark matter search with the XENON1T experiment.*
- Lausanne, Switzerland, Summer School on Recent Trends in Light-Matter Interaction (04.-08.09.2017)  
**Pálffy-BuB, A.:**  
*An Introduction to X-ray Quantum Optics.*
- Lisboa, Portugal, 2<sup>nd</sup> Conference on Extremely High Intensity Laser Physics (ExHILP 2017) (05.-08.09.2017)  
**Di Piazza, A.:**  
*Radiation reaction in classical and quantum electrodynamics. (plenary talk)*  
**Meuren, S.:**  
*Recollision processes and other photon-induced strong-field QED phenomena in a plane-wave laser field.*  
**Tamburini, M.:**  
*Laser-pulse-shape control of seeded QED cascades.*
- London, United Kingdom, Workshop on Quantum Optics to Quantum Technology (QOTOQT) in honour of Professor Sir Peter Knight's 70<sup>th</sup> birthday (11.-13.07.2017)  
**Keitel, C. H.:**  
*High-energy quantum optics with extremely intense laser pulses.*
- Lyon, France, 7th International Workshop on Electrostatic Storage Devices (19.-22.06.2017)  
**George, S.:**  
*Internal dynamics of stored cluster ions.*  
**Meyer, C.:**  
*Laser probing and population distributions of stored ions.*  
**Wilhelm, P.:**  
*The electron merged beam at CSR.*
- Lyon, France, ESD Workshop (14.-16.06.2017)  
**Moshhammer, R.:**  
*The CSR Reaction-Microscope.*
- Madrid, Spain, 20<sup>th</sup> International Planck Conference (19.-23.06.2017)  
**Arcadi, G.:**  
*Probing the WIMP paradigm at future experiments.*
- Madrid, Spain, ESA/ESO SciOps workshop 2017 "Working Together in Support of Science" (17.-28.10.2017)  
**Hinton, J.A.:**  
*CTA Distributed Operations.*

Magnetic Island, Townsville, Australia, XIX International Workshop on Low-Energy Positron and Positronium Physics and XX International Symposium on Electron-Molecule Collisions and Swarms, POSMOL2017 (21.-24.07.2017)

**Wolf, A.:**

*Low-energy electron collisions of molecular ions: New opportunities in a cryogenic storage ring.*

Mainz, Germany, DPG Spring Meeting (06.-10.03.2017)

**Crespo López-Urrutia, J. R.:**

*Interrogating strongly bound electrons about fundamental physics.*

**Ott, C.:**

*Electron Correlation Dynamics in Weak and Strong Fields.*

**Blättermann, A.:**

*Amplitude and phase control of an atom's optical response.*

**Blaum, K.:**

*Precision Measurements of Fundamental Properties of Atomic Particles in Penning traps. (plenary talk)*

Mainz, Germany, Supernova Neutrino Observations Workshop (01.10.2017)

**Brdar, V.:**

*Dark Gamma Ray Bursts.*

Marburg, Germany, REHE 2017 (03.09.2017)

**Schwenk, A.:**

*Ab initio calculations of the nuclear chart.*

Minsk, Belarus, XV. International Conference on Quantum Optics and Quantum Information (20.-23.11.2017)

**Skoromnik, O. D.:**

*Quantum effects in strong field QED.*

Moscow, Russia, 18<sup>th</sup> Lomonosov Conference on Elementary Particle Physics (24.-30.08.2017)

**Knöpfle, K.T.:**

*Status and prospects of the search for neutrinoless double-beta decay of <sup>76</sup>Ge.*

Mumbai, India, 13th International Workshop on Applied Antineutrino Physics (IWAAP 2017/AAP 2017) (30.11.-01.12.2017)

**Rink, T.:**

*The CONUS experiment - Measuring COherent elastic Neutrino nUcleus Scattering at reactor Site.*

**Roca, C.:**

*Search for eV Sterile Neutrinos: The Stereo Experiment.*

Mumbai, India, 25th International Conference on Supersymmetry and Unification of Fundamental Interactions (SUSY 17), Tata Institute of Fundamental Research (TIFR) (11.-15.12.2017)

**Lindner, M.:**

*Neutrino mass models.*

München, Germany, Direct Dark Matter Detection: Experiment meets Theory Workshop (03.2017)

**Queiroz, F.:**

*Probing Two Higgs Doublet Models with Higgs Precision Measurements.*

Münster, Germany, 81st DPG Spring Meeting (27.-31.03.2017)

**Almazan, H.:**

*Consistencies of the neutron detection efficiency in the Double Chooz reactor neutrino detectors.*

**Cichon, D.:**

*Internal backgrounds in the XENON100 experiment.*

**Helmboldt, A.:**

*Prospects for three-body Higgs decays into extra light scalars.*

**Lindner, M.:**

*Direct Dark Matter Detection. (Plenarvortrag)*

**Platscher, M.:**

*Lepton Flavour Violation and the Muon Anomalous Magnetic Moment.*

**Rink, T.:**

*Coherent elastic neutrino nucleus scattering as a window to new physics.*

*From CP Phases to Yukawa Textures - Maximal Yukawa Hierarchies in Minimal Seesaw Models.*

**Roca, C.:**

*Calibration and energy scale using radioactive sources in the Stereo Experiment.*

**Xu, X.:**

*Coherent Neutrino-Nucleus Scattering and new Neutrino Interactions.*

**Eliseev, S.:**

*Penning-Trap Mass Spectrometry & Neutrino Physics.*

**Schwingerheuer, B.:**

*Search for Lepton Number Violation with Neutrinoless Double Beta Decay. (Hauptvortrag Teilchenphysik)*



- Obergurgl, Austria, SFB 1225 ISOQUANT Workshop (19.-24.02.2017)  
**Crespo López-Urrutia, J. R.:**  
*Precision physics in strong field QED and limits on the time variation of fundamental constants.*
- Odense, Denmark, DaNuCo on Dark Matter, neutrinos and their connections in astroparticle physics (28.08.-01.09.2017)  
**Alanne, T.:**  
*Neutrino mass generation and leptogenesis via pGB Higgs portal.*  
**Queiroz, F.:**  
*A Step Toward the Nature of Dark Matter with Direct Detection Experiments.*
- Orsay, France, Congrès général de la Société Française de Physique, Colloque „Pièges à Ions (04.07.2017)  
**Wolf, A.:**  
*Collisions with cooled molecules: a 300-keV cryogenic electrostatic ion storage ring.*
- Oxford, UK, Workshop on Plasma Astrophysics „From the Laboratory to the Non-Thermal Universe (03.-05.07.2017)  
**Hinton, J.A.:**  
*CTA and the Non-thermal Universe.*
- Palm Cove, Australia, (e,2e), Double Photo-Ionization & Related Topics Polarization and Correlation in Electronics & Atomic Collisions (02.-04.08.2017)  
**Blättermann, A.:**  
*Watching the emergence of a Fano resonance in doubly-excited helium.*  
**Pfeifer, T.:**  
*Watching and steering few- to many-electron bound-state dynamics.*  
**Ren, X.:**  
*Observation of intermolecular Coulombic decay (ICD) in hydrated biomolecule clusters induced by electron-impact.*
- Paris, France, Higgs Hunting (07.2017)  
**Queiroz, F.:**  
*Probing Two Higgs Doublet Models with Higgs Precision Measurements.*
- Podlesice, Poland, Matter to The Deepest - Recent Developments in Physics Of Fundamental Interactions (03.-08.09.2017)  
**Harman, Z.:**  
*Precision theory of the bound-electron g factor.*
- Prague, Czech Republic, 11<sup>th</sup> Meeting on Matrix Elements for Double Beta Decay Experiments (MEDEX 2017) (29.05.-02.06.2017)  
**Rodejohann, W.:**  
*Dirac vs. Majorana fermions in neutrino-electron scattering and in Dark Matter direct detection.*  
**Eliseev, S.:**  
*How could Penning-Trap Mass Spectrometry be useful to Neutrino Physics?*
- Prague, Czech Republic, 4<sup>th</sup> XLIC General Meeting (13.-17.03.2017)  
**Blättermann, A.:**  
*Observing the ultrafast build-up of a Fano resonance in the time domain.*
- Prague, Czech Republic, European Week of Astronomy and Space Science EWASS (26.-30.06.2017)  
**Casanova, S.:**  
*Molecular Clouds with CTA.*
- Prague, Czech Republic, SPIE Optics + Optoelectronics 2017 (24.-27.04.2017)  
**Bauke, H.:**  
*Electrons in strong electromagnetic fields: spin effects and radiation reaction.*  
**Keitel, C. H.:**  
*High-energy quantum processes in extremely intense laser pulses (keynote presentation).*
- Prague, Czech Republic, XXXVII International Symposium on Physics in Collision (04.-08.09.2017)  
**Schwingenheuer, B.:**  
*Search for Lepton Number Violation with Neutrinoless Double Beta Decay.*
- Pyatigorsk, Russia, APPEC, The Mount Elbrus Conference from Deep Underground up to the Sky (11.-15.09.2017)  
**Schwingenheuer, B.:**  
*Latest GERDA results on Lepton Number Violation: search of neutrinoless double beta decay of <sup>76</sup>Ge.*
- Rehovot, Israel, From Ultrafast to Ultraslow Dynamics in Molecules and Clusters, Weizmann Institute (23.-25.01.2017)  
**Pfeifer, T.:**  
*Attosecond XUV spectroscopy and femtosecond x-ray imaging of Atomic and Molecular Dynamics in Strong Laser Fields.*  
**George, S.:**  
*Dynamical processes of anionic clusters.*
- Rehovot, Israel, SRitp Workshop: BSM in direct, indirect and tabletop experiments, Weizmann Institute (05.-16.11.2017)  
**Crespo López-Urrutia, J. R.:**  
*Spectroscopy of highly charged ions for probing fundamental interactions.*

- Riezlern, Austria, 38<sup>th</sup> Extreme Atomic Systems (EAS) Meeting (30.-02.02.2017)  
**Oreshkina, N. S.:**  
*Variation of the fundamental constants in simple ions.*  
**Yerokhin, V. A.:**  
*g factor of the bound-electron in H-like and Li-like ions.*
- Rome, Italy, 3<sup>rd</sup> International Conference on High Energy Physics (11.-12.12.2017)  
**Pálffy-BuB, A.:**  
*Laser-nucleus reactions at the upcoming extreme light infrastructure.*
- Sacramento, USA, DAMOP (07.06.2017)  
**Novotný, O.:**  
*Astrochemistry in TSR & CSR storage rings.*
- Saint Petersburg, Russia, The International Conference on the Applications of the Mössbauer Effect (ICAME 2017) (03.-08.09.2017)  
**Heeg, K. P.:**  
*X-ray quantum optics with Mössbauer nuclei.*
- Santa Fe, NM, USA, "Cosmic rays, pulsars & dark matter" (01.-03.03.2017)  
**Kirk, J.G.:**  
*Particle acceleration at pulsar wind termination shocks.*
- Sarteano, Italy, 1<sup>st</sup> JPP Frontiers in Plasma Physics Conference (24.-26.05.2017)  
**Di Piazza, A.:**  
*Theoretical challenges in strong-field QED.*
- Seattle, USA, INT Program INT-17-2a Opening Workshop (13.-14.06.2017)  
**Rodejohann, W.:**  
*Neutrinoless double Beta Decay and Particle Physics: Overview.*
- Shanghai, China, International Workshop on Neutrinoless Double Beta Decay Physics (20.-24.06.2017)  
**Rodejohann, W.:**  
*Neutrinoless double Beta Decay and Particle Physics: Overview.*
- Singapore, From a single particle to many-body quantum physics and its application workshop (15.02.2017)  
**Crespo López-Urrutia, J. R.:**  
*Highly charged ions as sensitive probes for the time variation of the fine-structure constant  $\alpha$ .*
- Snowbird, Utah, USA, 47<sup>th</sup> Winter Colloquium on the Physics of Quantum Electronics (PQE-2017) (08.-13.01.2017)  
**Evers, J.:**  
*Inducing and detecting collective population inversions of Mössbauer nuclei.*  
**Keitel, C. H.:**  
*High-energy quantum processes in extremely intense laser pulses. (plenary talk)*  
**Kong, X.:**  
*Using nuclear transitions to control and store x-ray photons.*
- Strasbourg, France, International Workshop on Future Linear Colliders (LCWS2017) (23.-27.10.2017)  
**Helmboldt, A.:**  
*Quark flavour-violating Higgs decays at the ILC.*
- Sudbury, Canada, XV<sup>th</sup> International Conference on Topics in Astroparticle and Underground Physics, TAUP2017, Laurentian University (24.-28.07.2017)  
**Lindner, M.:**  
*Results from XENON1T.*  
**Rodejohann, W.:**  
*Neutrino Theory Overview.*  
**Schopmann, S.:**  
*Search for eV Sterile Neutrinos – The Stereo Experiment.*
- Szeged, Hungary, ELI-ALPS User Workshop (09.-10.11.2017)  
**Moshhammer, R.:**  
*Reaction Microscopes visualize the Dynamics of Atoms and Molecules.*
- Thessaloniki, Greece, Patras Workshop 2017 (15.-19.05.2017)  
**Vogl, S.:**  
*How to save the WIMP?*
- Tokyo, Japan, PPNS Symposium (07.11.2017)  
**Schwenk, A.:**  
*From nuclear forces to nuclei and matter.*

- Toulouse, France, 3rd meeting on the Energy processing of Large Molecules (EPoLM3) (14.-16.06.2019)  
**Mishra, P.M.:**  
*Photo-detachment spectroscopy of anions in Cryogenic Storage Ring: CSR.*
- Trento, Italy, ECT\* Workshop "Bridging nuclear and gravitational physics: the dense matter equation of state" (07.06.2017)  
**Schwenk, A.:**  
*Equation of state and neutron star properties constrained by chiral effective field theory and observations.*
- Venice, Italy, EPS Conference on High Energy Physics, HEP2017 (05.-12.07.2017)  
**Schmelling, M.:**  
*Measurement of Inelastic Cross-Section and Central Exclusive Production with the LHCb Detector.*  
**Hofmann, W.:**  
*High Energy Cosmic Gamma Rays.*
- Venice, Italy, The European Physical Society Conference on High Energy Physics (EPS-HEP) (05.-12.07.2017)  
**Lindner, M.:**  
*Direct Searches for Dark Matter. (plenary talk)*  
**Queiroz, F.:**  
*Overview on WIMP Dark Matter.*  
**Smirnov, A. Y.:**  
*Open problems in neutrino physics.*
- Waikoloa (HI), USA, Nonlinear Optics 2017 (17.-21.07.2017)  
**Blättermann, A.:**  
*A strong-field-ionization-enabled temporal gate for resolving ultrafast dynamics.*
- Warsaw, Poland, International Conference on Precision Physics and Fundamental Physical Constants (FFK-2017) (15.-19.05.2017)  
**Sturm, S.:**  
*Testing strong field QED via the magnetic moment of highly charged ions.*  
**Oreshkina, N. S.:**  
*Variation of the fundamental constants in simple ions.*
- Warsaw, Poland, PLANCK 2017: 20th International Conference from the Planck Scale to the Electroweak Scale (22.-27.05.2017)  
**Arcadi, G.:**  
*Augury of Darkness.*  
**Lindner, M.:**  
*Conformal Extensions of the Standard Model. (plenary talk)*
- Warsaw, Poland, Scalars 2017 (30.11.-03.12.2017)  
**Lindner, M.:**  
*New symmetries and electro-weak symmetry breaking.*
- Washington, D. C., USA, Topical Meeting on Isotope-Based Energy Sources (Workshop on "Radioisotope power sources; gamma rays, nuclei and matter") (15.-16.05.2017)  
**Wu, Y.:**  
*Nuclear excitation with lasers - x-ray free-electron lasers and intense optical lasers.*
- Xi'an, China, 6<sup>th</sup> International Conference on Attosecond Physics (02.-07.07.2017)  
**Ott, C.:**  
*Tracking the Insulator-to-Metal Phase Transition in VO<sub>2</sub> with Few-Femtosecond Extreme Ultraviolet Transient Absorption.*  
**Stoß, V.:**  
*Reconstructing real-time quantum dynamics in strong and short laser fields.*
- Xi'an, China, China-Germany Collaboration Workshop on High Energy Density Science and Technology (17.-19.10.2017)  
**Harman, Z.:**  
*Generation of high-quality ion and x-ray beams via intense laser fields.*  
**Hatsagortsyan, K. Z.:**  
*Radiation dominated processes in ultrastrong laser fields.*
- Yokohama, Japan, Light driven Nuclear-Particle physics and Cosmology (LNPC'17) (19.-21.04.2017)  
**Hatsagortsyan, K. Z.:**  
*Radiation dominated nonlinear Compton scattering: signatures of quantum dynamics and attosecond gamma-bursts.*  
**Di Piazza, A.:**  
*Strong-field QED in tightly focused laser beams.*

## At Other Institutes

Aharonian, F.:

***Probing Origin of Cosmic Rays.***

Mainz, Germany, Johannes Gutenberg-Universität, Prisma Colloquium (10.05.2017)

Akhmedov, E.:

***Do non-relativistic neutrinos oscillate?***

Lisbon, Portugal, Instituto Superior Tecnico, CFTP/LIP Neutrino Forum (19.10.2017)

***Neutrino oscillations in quantum mechanics and quantum field theory.***

Lisbon, Portugal, Instituto Superior Tecnico, CFTP Seminar (25.10.2017)

Alanne, T.:

***Partially composite Goldstone Higgs.***

Institute for Theoretical Physics, University of Heidelberg, particle phenomenology seminar (14.11.2017)

Arcadi, G.:

***Probing the WIMP paradigm with Direct Detection and Collider.***

ITP Heidelberg, Germany (16.05.2017)

***Theoretical Models for Dark Matter.***

IFT Madrid, Spain (27.02.2017)

Bilous, P. V.:

***Decay channels of Th-229 nuclear isomeric state involving atomic electrons.***

Sofia, Bulgaria, Institute for Nuclear Researches and Nuclear Energy, Physics Seminar (30.03.2017)

Blaum, K.:

***Precision Measurements of Fundamental Properties of Atomic Particles in Penning traps.***

University of Innsbruck, Austria (17.01.2017)

***Measuring the World - Precision Measurements of Fundamental Properties of Atoms and Nuclei.***

Festkolloquium, Universität Mainz, Germany (18.04.2017)

Universität Bielefeld, Germany (22.05.2017)

Humboldt-Universität Berlin, Germany (06.06.2017)

Physikalisches Kolloquium, Institut für Physik, Universität Kassel, Germany (07.12.2017)

Physikalisches Kolloquium, Universität Ulm, Germany (11.12.2017)

***Radioactive Ion Beams as Versatile Probes for Fundamental Studies.***

Retirement celebration Professor Mark Huysse, Thermotechnical Institute, KU Leuven, Belgium (15.09.2017)

Buck, C.:

***Recent results of the Double Chooz reactor neutrino experiment.***

Assergi, Italy LNGS seminar (16.02.2017)

Cavaletto, S. M.:

***Line-shape manipulation and deterministic control of strong-field excited systems.***

Madrid, Spain, Universidad Autónoma de Madrid, Physics Colloquium (14.03.2017)

Crespo López-Urrutia, J. R.:

***Cold highly charged ions for highest-precision spectroscopy.***

Mainz, Germany, Mainz University, Physikalisches Kolloquium (03.05.2017)

***Progress report on the CryPTE-II project.***

Braunschweig, Germany, PTB (24.05.2017)

Seminar on highly charged ions (group Savin) New York, USA, Columbia University (20.06.2017)

Di Piazza, A.:

***Modern aspects of quantum electrodynamics in intense and tightly-focused laser fields.***

Măgurele, Romania, ELI-NP, Physics Seminar (13.11.2017)

Berkeley, California, USA, Lawrence Berkeley National Laboratory, Physics Seminar (10.10.2017)

Menlo Park, California, USA, SLAC National Accelerator Laboratory, High Energy Density Science Seminar (26.09.2017)

***Recent developments in classical and quantum electrodynamics in intense laser fields.***

Villigen, Switzerland, Paul Scherrer Institute, Physics Colloquium (27.04.2017)

Dorn, A.:

***Electron Impact Ionization of Atoms, Molecules and Clusters.***

Faculty Colloquium, Missouri University of Science and Technology (UST), USA (15.11.2017)

**Evers, J.:**

***X-ray quantum optics with Mössbauer nuclei.***

Kaiserslautern, Germany, TU Kaiserslautern, Physikalisches Kolloquium (26.06.2017)

***Strong-field physics with nuclei and highly charged ions.***

Heidelberg, Germany, Department of Physics and Astronomy, University of Heidelberg, SFB 1225 ISOQUANT lunchtime seminar (28.04.2017)

***Nuclear quantum optics.***

Hamburg, Germany, DESY, PETRA III Beamline P01 evaluation (26.04.2017)

**George, S.:**

***The Cryogenic Storage Ring Project.***

ISOLDE Seminar Talk, CERN, Geneva, Switzerland (16.08.2017)

**Giacinti, G.:**

***Cosmic-Rays (and Gamma-Rays) as Probes of Interstellar Magnetic Fields.***

Paris, France, École Normale Supérieure (ENS), Seminar (31.03.2017)

**Goertz, F.:**

***Das Standardmodell der Teilchenphysik: Symmetrien und Lagrangedichte.***

CERN, Switzerland, Workshop 'Netzwerk Teilchenwelt' for Students (09.06.2017)

***Flavor, Electroweak Symmetry Breaking, and Cosmology.***

ITP Heidelberg, Germany, Teilchentee (18.05.2017)

DESY Hamburg, Germany, Theory Seminar

***Flavor in EWSB and in the Sky.***

(15.05.2017)

***The Axiflavor.***

CERN, Geneva, Switzerland, BSM Forum (29.03.2017)

SISSA Trieste, Italy, TPP Group Seminar (02.02.2017)

**Grieser, M.:**

***Langsame Extraktion von Elektronen-gekühlten Ionen-Strahlen.***

Marburger Ionenstrahl-Therapiezentrum (MIT), Marburg, Germany, (01.02.2017)

**Gunst, J.:**

***X-rays and nuclear transitions: mutual control via resonant interaction.***

Jena, Germany, Helmholtz Institute Jena, Internal Group Seminar (11.04.2017)

***Isomer Triggering in Plasmas via Nuclear Excitation by Electron Capture.***

Sofia, Bulgaria, Institute of Nuclear Research and Nuclear Energy (INRNE), Seminar (30.03.2017)

**Hatsagortsyan, K. Z.:**

***Interplay between Coulomb-focusing and non-dipole effects in strong-field ionization.***

Hannover, Germany, Leibniz University Hannover, Group Seminar (31.05.2017)

***Radiation dominated nonlinear Compton scattering.***

Aarhus, Denmark, Aarhus University, Special Seminar of the Physics Department (18.01.2017)

**Helmboldt, A.:**

***Prospects for three-body Higgs decays into extra light scalars.***

Heidelberg, Germany, Particle Phenomenology seminar of the Institute for Theoretical Physics (10.01.2017)

**Kirk, J.G.:**

***Inductive spikes in the Crab Nebula.***

Zeuthen, Germany, DESY, Colloquium (22.09.2017)

**Kong, X.:**

***From electromagnetically induced transparency to Autler-Townes splitting with x-rays.***

ICFO, Barcelona, Spain, The Institute of Photonic Sciences (ICFO), seminar (07.12.2017)

**Kreckel, H.:**

***Laboratory Astrophysics with Stored Molecular Ions.***

Innsbruck, Österreich, Institutsseminar, Institut für Ionenphysik und Angewandte Physik, Universität Innsbruck (22.11.2017)

**Lindner, M.:**

***The Search of Dark Matter in the Universe.***

Mumbai, India, Colloquium at Tata Institute of Fundamental Research (TIFR) (13.12.2017)

***Neutrino Theory.***

Max-Planck-Institut für Physik, München, 100 Year Anniversary Workshop (10.10.-12.10.2017)

***The dark side of the universe.***

Heidelberg, „Heraeus summer school 2017" (28.08.2017)

***Direct Dark Matter Search with XENON1T.***

Max-Planck-Institut für Physik, München, Kolloquium (04.07.2017)

***Direct detection of dark matter.***

Universität Frankfurt, Kolloquium (08.02.2017)

**Maneschg, W.:**

***Present status of coherent neutrino nucleus scattering searches.***

Mainz University, Germany, Prisma Colloquium and Seminar of the Graduate School (14.06.2017)

**Marrodán Undagoitia, T.:**

***First results from the XENON1T dark matter experiment.***

London, UK, Physics seminar, Imperial College London (11.2017)

Hamburg DESY, Germany, Physics seminar (25.10.-26.10.2017)

Zeuthen, DESY, Physics seminar (25.10.-26.10.2017)

***XENON1T first results.***

Bonn, Germany, Particle Physics Seminar (06.2017)

**Meuren, S.:**

***Theoretical and Experimental Investigation of the Nonperturbative Regime of Quantum Electrodynamics.***

Menlo Park, California, USA, Stanford Linear Accelerator Center (SLAC), Seminar (30.03.2017)

**Mishra, P. M.:**

***Photo-excitation experiments and development of an electrostatic beamline of Cryogenic Storage Ring CSR.***

RIKEN, Japan (26.07.2017)

**Mitchell, A.:**

***Very High Energy Gamma-ray Astronomy with H.E.S.S. and CTA.***

Holmbury St. Mary-Surrey, United Kingdom, UCL, Mullard Space Science Laboratory, Astrophysics-Seminar (23.02.2017)

Zürich, Switzerland, University of Zürich, Physik-Institut, Experimental Particle and Astroparticle - Physics Seminar (29.11.2017)

**Oreshkina, N. S.:**

***Hyperfine splitting in simple ions for the search of the variation of fundamental constants.***

Braunschweig, Germany, PTB, Atomic Clock Seminar (13.10.2017)

**Ott, C.:**

***XUV correlated electron dynamics in weak and strong fields.***

Hamburg, Germany, DESY, CFEL Molecular Physics Seminar (4.5.2017)

***XUV absorption spectroscopy in weak and strong fields.***

Jena, Germany, Helmholtz Institut Jena, Helmholtz Institutsseminar (31.5.2017)

**Pfeifer, T.:**

***Listening to the ultrafast chat of two excited electrons - And asking them Physics questions.***

Konstanz, Germany, Physikalisches Kolloquium (23.05.2017)

Oldenburg, Germany, Physikalisches Kolloquium (29.05.2017)

Kaiserslautern, Germany, Physikalisches Kolloquium (19.06.2017)

**Platscher, M.:**

***Cosmological Aspects of Bimetric Gravity.***

München, Germany, MPP Astroparticle Seminar (20.04.2017)

Heidelberg, Germany, ITP Seminar (09.02.2017)

**Queiroz, F.:**

***Probing the Nature of Dark Matter with Direct Detection Experiments Only.***

Orsay, France, LPT 2017 (07.2017)

***New Physics Milestones: From Dark Matter to Flavor Physics.***

Odense, Denmark, Institute for Advanced Studies (06.2017)

***Probing the Nature of Dark Matter.***

Natal, Brazil, International Institute of Physics (05.2017)

Joao Pessoa, Brazil, Federal Univ. of Paraiba (05.2017)

Darmstadt, Germany, GSI Helmholtz Centre for Heavy Ion Research (01.2017)

Oslo, Norway, Oslo Univ. (01.2017)

***Research Overview: From Dark Matter to Flavor Physics.***

Louvain, Belgium, Univ. Catholique de Louvain (02.2017)

***Dark Matter Overview: A Step Toward the Nature of Dark Matter.***

Brussels, Belgium, Vrije Univ. of Brussels (02.2017)

**Schmelling, M.:**

***Physics Highlights from the LHCb Experiment.***

Siegen, Germany, Universität, Physik-Kolloquium (30.11.2017)

***Heavy Ion Physics with the LHCb Detector.***

München, Germany, TUM, Seminar on Physics of Strong Interactions (30.01.2017)

**Schwenk, A.:**

***Chiral effective field theory for dark matter direct detection.***

Teilchen-Tee, ITP, Heidelberg, Germany, (21.06.2018)

***Fermionen und Materie - Das Prinzip, das Ordnung bringt.***

Saturday Morning Physics, Darmstadt, Germany (11.11.2017)

**Schwingerheuer, B.:**

***Search for Neutrinoless Double Beta Decay of  $^{76}\text{Ge}$ : latest results from GERDA and a novel detector design for GERDA & LEGEND.***

Dubna, Russia, Joint Institute for Nuclear Research JINR, Seminar (11.09.2017)

**Viana, A.:**

***The Galactic Centre at very-high energies.***

Santiago de Chile, PUC, Seminar (19.10.2017)

***PeV particle acceleration at the Galactic Center.***

São Carlos, Brazil, Instituto de Física, Seminar (25.10.2017)

**Vogl, S.:**

***FIMPs and friends: Probing dark matter with long-lived particles at the LHC.***

Heidelberg, Germany, Ruprecht-Karls-Universität, Particle Phenomenology Seminar (28.11.2017)

***Dark Matter and the LHC: Realistic simplified models for collider searches.***

Detroit, USA, Wayne State University, High Energy Physics Seminar (14.08.2017)

***Simplified models in collider searches for dark matter.***

Heidelberg, Germany, Ruprecht-Karls-Universität, Colliding Pizza Seminar (16.01.2017)

**Wolf, A.:**

***New Opportunities for Molecular Collision Experiments in Cryogenic Storage Rings.***

RIKEN, Tokyo, Special Seminar (01.02.2017)

**Xu, X.:**

***BSM physics in neutrino scattering.***

Ruprecht-Karls-Universität, Heidelberg, Germany (11.2017)

# Invited Talks 2018

## At Conferences and Symposia

Aachen, Germany, 7th Symposium on Symmetries in Subatomic Physics (SSP 2018) (12.06.2018)

**Köhler-Langes, F.:**

*Towards Parts Per Trillion Mass Measurements on the Proton and Other Light Nuclei at LIONTRAP.*

**Sturm, S.:**

*Stringent tests of bound-state QED using highly charged ions.*

Bad Honnef, Germany, 670. Heraeus Seminar "Fundamental Constants: Basic Physics and Units" (13.-18.05.2018)

**Schüssler, R.:**

*High-Precision Mass Measurements with PENTATRAP.*

**Sturm, S.:**

*The magnetic moment of highly charged ions: Test of strong field QED and access to fundamental constants.*

**Crespo López-Urrutia, J. R.:**

*Highly charged ions for fundamental studies.*

**Oreshkina, N. S.:**

*Hyperfine splitting in simple ions for the search of the variation of fundamental constants.*

Bad Honnef, Germany, 676. WE-Heraeus-Seminar on "Novel optical clocks in atoms and nuclei" (09.-12.07.2018)

**Crespo López-Urrutia, J. R.:**

*Electronic transitions in highly charged ions with possible applications to the electron-nucleus bridge mechanism.*

**Pálffy-Buß, A.:**

*Nuclear and atomic structure calculations for the  $^{229m}\text{Th}$  isomeric state.*

Bad Honnef, Germany, FEL School (26.09.2018)

**Moshhammer, R.:**

*Atomic Physics at the FEL.*

Barnaul and Belokurikha, Russia, 26th European Cosmic Ray Symposium, ECRS 2018 (06.-10.07.2018)

**Giacinti, G.:**

*TeV-PeV Cosmic-Ray Anisotropy and Local Interstellar Turbulence.*

Basel, Switzerland, 7th FLASY conference, University of Basel (02.-05.07.2018)

**Trautner, A.:**

*Vectorlike chiral" fourth family to explain muon anomalies.*

Batavia, IL, USA, Physics Opportunities in the Near DUNE Detector Hall (03.-07.12.2018)

**Bischer, I.:**

*General Neutrino-Electron Interactions at the DUNE Near Detector.*

Berlin, Germany, Conference on TeV Particle Astrophysics, TeVPA 2018 (27.-31.08.2018)

**Hofmann, W.:**

*Gamma-ray astronomy: Status and Perspectives.*

**Dembinski, H.:**

*Data-driven model of the cosmic-ray flux and mass composition over all energies.*

**Marrodán Undagoitia, T.:**

*Direct dark matter detection.*

Bern, Switzerland, ISSI workshop "The Physics of the Very Local Interstellar Medium and its Interaction with the Heliosphere" (17.-20.09.2018)

**Giacinti, G.:**

*Simulations of the Cosmic-Ray Anisotropy down to TeV Energies.*

Bielefeld, Germany, 13. Kosmologietage" (04.05.2018)

**Doering, C.:**

*Gravitational Waves from Peccei-Quinn Symmetry breaking.*

Blacksburg, USA, NuFact 2018 (08.2018)

**Xu, X.:**

*Probing neutrino coupling to a light scalar with coherent neutrino scattering.*

Bochum, Germany, DPG Spring Meeting (01.03.2018)

**Köhler-Langes, F.:**

*A New Experiment for High-Precision Measurements on Light Atomic Masses - An Improved Value of the Atomic Mass of the Proton.*



- Bonn, Germany, 21<sup>th</sup> International Planck Conference (21.-25.05.2018)  
**Alanne, T.:**  
*Partially composite Goldstone Higgs.*
- Arcadi, G.:  
*Leptogenesis from Small Lepton Number Violation.*
- Goertz, F.:  
*Effective Field Theory for the LHC and Dark Matter.*
- Bormio, Italy, 56. International Winter Meeting on Nuclear Physics (22.-26.01.2018)  
**Blaum, K.:**  
*Precision atomic physics measurements in Penning traps and tests of fundamental symmetries.*
- Caparica, Portugal, 15th Topical Workshop of the Stored Particles Atomic Physics Research Collaboration (SPARC) (07.-11.09.2018)  
**Crespo López-Urrutia, J. R.:**  
*Towards VUV optical clocks with highly charged ions.*
- Novotny, O.:  
*Results from the Heidelberg Cryogenic Storage Ring.*
- Chicago, USA, University of Chicago, Workshop on coherent elastic neutrino-nucleus scattering (CEvNS) (02.-03.11.2018)  
**Lindner, M.:**  
*The CONUS Coherent Reactor Neutrino Scattering Experiment.*
- Chişinău, Moldova, 9<sup>th</sup> International Conference on Materials Science and Condensed Matter Physics (24.-28.09.2018)  
**Evers, J.:**  
*X-ray quantum optics.*
- Cochem, Germany, Int. Workshop: "Monitoring the non-thermal Universe 2018" (18.-21.09.2018)  
**Romoli, C.:**  
*Complex spectro-temporal gamma-ray behaviour of Mrk 501.*
- Daejeon, Korea, 6th Symposium on Neutrinos and Dark Matter in Nuclear Physics (NDM18) (28.06.-03.07.2018)  
**Lindner, M.:**  
*Coherent Neutrino Scattering and the Status of CONUS.*
- Eliseev, S.:  
*Penning Traps & Neutrino Mass.*
- Daejeon, South Korea, Attosecond physics at the Nanoscale, PCS/IBS (29.10.-02.11.2018)  
**Pfeifer, T.:**  
*Approaching nano-scale dynamics from below: Excited few-electron systems in strong fields.*
- Darmstadt, Germany, GSI, EMMI RRTF "The physics of neutron star mergers at GSI/FAIR" (14.06.2018)  
**Schwenk, A.:**  
*Equation of state and neutron star properties constrained by chiral effective field theory and observations.*
- Darmstadt, Germany, NARRS Workshop at GSI Darmstadt (13.-15.03.2018)  
**Grieser, M.:**  
*A new storage ring for ISOLDE.*
- Darmstadt, Germany, Uncertainty Quantification at the Extremes (ISNET-6) (10.10.2018)  
**Schwenk, A.:**  
*Uncertainty estimates for neutron-rich nuclei and neutron stars.*
- Denver, USA, 232nd AAS (03.-07.06.2018)  
**Crespo López-Urrutia, J. R.:**  
*Laboratory X-ray studies with trapped highly charged ions using synchrotron and free-electron lasers.*
- Dresden, Germany, „5th International Solar Neutrino Conference" (11.-15.06.2018)  
**Smirnov, A. Y.:**  
*MSW effect, solar neutrinos and searches for new physics.*
- Dresden, Germany, International Workshop on Atomic Physics 2018 (27.-30.11.2018)  
**Di Piazza, A.:**  
*Ultrarelativistic electron states and strong-field QED processes in tightly focused laser pulses.*
- Hatsagortsyan, K. Z.:  
*High-energy direct photoelectron spectroscopy in strong-field ionization.*
- Dublin, Ireland, DIAS Summer School in High-Energy Astrophysics (19.-29.06.2018)  
**Tuffs, R.J.:**  
*Galaxis.*

Dublin, Ireland, International Conference on Spectral Line Shapes (ICSLS 2018) (17.-22.06.2018)

**Pfeifer, T.:**

***Switching Lorentzian to Fano Line Shapes with Intense Lasers — from attosecond electronics to Sub-Ångstrom Nuclear Resonance Metrology.***

En Bokek, Israel, Workshop „Isradynamics (22.-29.04.2018)

**Kirk, J.G.:**

***Gamma-ray flares from pulsar wind nebulae.***

Erlangen, Germany, DPG Spring Meeting SAMOP (04.-09.03.2018)

**Harth, A.:**

***Solving attosecond time-delay puzzles near resonances and in the continuum: The future of OPCPA-driven high-harmonic generation.***

**Köhler-Langes, F.:**

***A New Experiment for High-Precision Measurements on Light Atomic Masses - An Improved Value of the Atomic Mass of the Proton.***

**Meyer, C.:**

***First molecular beam cooled to its lowest quantum states at the Heidelberg Cryogenic Storage Ring.***

**Schnorr, K.:**

***Tracing the nuclear and electronic structure of excited molecules using femtosecond XUV and X-ray pulses.***

Fort Lauderdale, Florida, USA, Third annual workshop of the Group on Precision Measurements and Fundamental Constants "Precision-measurement searches for new physics" (28.05.2018)

**Blaum, K.:**

***Precision measurements of fundamental properties of atoms and nuclei in Penning traps.***

Garching, Germany, SNI 2018 (17.-19.09.2018)

**Moshhammer, R.:**

***Atomic and Molecular Physics Experiments with the REMI-Endstation at FLASH2.***

Geneva, CERN, Switzerland, EP-Colloquium at CERN (28.05.2018)

**Lindner, M.:**

***Results from the 1 tonne\*year Dark Matter Search with XENON1T.***

Geneva, CERN, Switzerland, European Neutrino "Town" Meeting (22.-24.10.2018)

**Lindner, M.:**

***Neutrinos: Overview.***

Geneva, CERN, Switzerland, The Neutrino Platform Week (29.01.-02.02.2018)

**Akhmedov, E.:**

***Neutrino coherence and decoherence.***

**Rodejohann, W.:**

***Where are we, where are we heading to?***

**Smirnov, A. Y.:**

***Solar neutrinos: status and prospects.***

Geneva, Switzerland, 82nd ISOLDE Collaboration Committee meeting at CERN (26.06.2018)

**Grieser, M.:**

***A preliminary design for a compact storage ring and possible integration into the HIE-ISOLDE hall.***

Grenoble, France, ESRF User Meeting 2018 (05.-07.02.2018)

**Heeg, K. P.:**

***Sharp X-ray pulses for nuclear resonances. (plenary talk)***

Hamburg, Germany, DESY User Meeting 2018, Satellite Workshop on Photon Science (22.01.2018)

**Moshhammer, R.:**

***Pump-Probe Experiments with the Reaction Microscope at FLASH2.***

Hamburg, Germany, Laboratory Astrophysics Workshop 2018 at DESY (10.10.2018)

**Novotny, O.:**

***First Rotationally Specific Dissociative Recombination Measurements at the CSR Ion Storage Ring.***

Hamburg, Germany, Particle and Astroparticle Physics Colloquium and Workshop on "Probing strong-field QED in electron-photon interactions" (21.-24.08.2018)

**Keitel, C. H.:**

***Extremely high-intensity laser interactions with fundamental quantum systems. (plenary talk)***

**Tamburini, M.:**

***Giant energy transfer from an electron bunch to a photon beam mediated by radiation reaction.***

- Hamburg, Germany, The Puzzle of Dark Matter (29.-31.10.2018)  
**Tenorth, V.T.:**  
*Extended Dark Matter EFT.*
- Hamburg, Germany, XXI International Conference on Ultrafast Phenomena (15.-20.07.2018)  
**Birk, P.:**  
*Real-time Reconstruction of Non-equilibrium Quantum Dynamics.*
- Hannover, Germany, EQLIPS Workshop 2018 (22.06.2018)  
**Sturm, S.:**  
*Probing the limits of QED with laser-cooled highly charged ions.*
- Heidelberg, Germany, ALICE Jpsi2ee PAG Workshop (29.-31.01.2018)  
**Schmelling, M.:**  
*Introduction to (T)MVA.*
- Heidelberg, Germany, Dark Matter at the Dawn of Discovery? (09.-11.04.2018)  
**Vogl, S.:**  
*Connection of indirect detection to LHC.*
- Heidelberg, Germany, DM@LHC (03.-06.04.2018)  
**Alanne, T.:**  
*Extended Dark Matter EFT.*  
**Tenorth, V.T.:**  
*Consistent Models of Dark Matter at the LHC.*  
**Schwenk, A.:**  
*Linking LHC and direct detection results in Higgs Portals.*  
**Marrodán Undagoitia, T.:**  
*Direct detection: results from liquid noble-gas experiments.*
- Heidelberg, Germany, Hillas Symposium (10.-12.12.2018)  
**Aharonian, F.:**  
*Hillas Plot: trivial and non-trivial implications.*  
**Hofmann, W.:**  
*Ground-based gamma-ray astronomy: Quo vadis.*  
**Zanin, R.:**  
*The Crab: a key source in high-energy astrophysics.*
- Heidelberg, Germany, Mini-Workshop at Max-Planck-Institut für Kernphysik (12.06.2018)  
**Eliseev, S.:**  
*Penning Trap measurements to support direct neutrino mass determination.*
- Heidelberg, Germany, SFB ISOQUANT PI Meeting 2018 (09.11.2018)  
**Sturm, S.:**  
*Precision physics in strong-field QED.*
- Heidelberg, Germany, SFB ISOQUANT Workshop (03.05.2018)  
**Mooser, A.:**  
*Bayesian analysis in g-factor measurements.*  
**Sturm, S.:**  
*Precision physics in strong-field QED and limits on the time variation of fundamental constants.*
- Heidelberg, Germany, SGSO Workshop (08.-09.10.2018)  
**Casanova, S.:**  
*Galactic Accelerators: Perspectives for SGSO.*
- Heidelberg, Germany, XXVIII International Conference on Neutrino Physics and Astrophysics (Neutrino 2018) (04.-09.06.2018)  
**Buck, C.:**  
*New Results from the Double Chooz Experiment.*  
**Maneschg, W.:**  
*Status of the CONUS experiment.*
- Hvar Island, Croatia, On a safe road to quantum gravity with matter (11.-14.09.2018)  
**Alanne, T.:**  
*The beta-function for gauge-Yukawa theory at large Nf.*
- Hyderabad, India, 16<sup>th</sup> Conference on Flavor Physics and CP violation (FPCP2018) (14.-18.07.2018)  
**Rodejohann, W.:**  
*Neutrino Physics: Present and Future.*

- Karlsruhe, 35<sup>th</sup> KATRIN Collaboration Meeting (07.-09.11.2018)  
**Rodejohann, W.:**  
*Probing physics beyond the Standard Model with the full spectrum.*
- Karlsruhe, Germany, A Quest for Guiding Principles Workshop (01.-02.10.2018)  
**Brdar, V.:**  
*Low Scale Left-Right Symmetry and Naturally Small Neutrino Mass.*
- Karlsruhe, Germany, Flavor and Dark Matter (25.-27.09.2018)  
**Tenorth, V.T.:**  
*Flavor and Dark Matter from the Electroweak Scale.*  
**Xu, X.:**  
*Searching for new physics in coherent neutrino scattering.*
- Karlsruhe, Germany, Invisibles 2018 School and Workshop (03.-07.09.2018)  
**Trautner, A.:**  
*CP violation caused by another symmetry.*
- Kazan, Russia, 4th Russian-German-French Laser Symposium (23.-27.04.2018)  
**Evers, J.:**  
*Shaping the spectra of short x-ray pulses by mechanical means.*  
**Pálffy-Buß, A.:**  
*An overview on x-ray quantum optics with nuclei. (plenary talk)*
- Kreuth, Germany, 9<sup>th</sup> Ringberg workshop on Science with FELs (07.-10.02.2018)  
**Cavaletto, S. M.:**  
*Narrow-band X-rays using FELs and highly charged ions.*  
**Ott, C.:**  
*XUV-only nonlinear wave mixing and absorption spectroscopy.*
- La Palma, Canary Island, Spain, Symposium "Frontiers of Astroparticle Physics" (09.-11.10.2018)  
**Hofmann, W.:**  
*The Cherenkov Telescope Array.*
- La Thuile, Italy, XXXII Les Rencontres de Physique de la Vallée d'Aoste, (25.02.-03.03.2018)  
**Schmelling, M.:**  
*Heavy Ion Physics at ATLAS, CMS and LHCb.*
- Lanzhou, China, Symposium on Precision Physics Experiments with Stored Highly Charged Ions at Low Energies, IMPCAS (13.-17.08.2018)  
**Grieser, M.:**  
*The low energy cooler storage ring TSR.*  
**Wolf, A.:**  
*Electron collision experiments in the TSR and the TSR cold electron target.*
- L'Aquila-GSSI, Italy, CRATER Workshop "Cosmic Ray Transport and Energetic Radiations" (28.05.-01.06.2018)  
**Giacinti, G.:**  
*Cosmic-Ray Diffusion in Galactic Magnetic Field Models.*  
**Aharonian, F.:**  
*Cosmic Rays in the Galaxy: Concluding Remarks.*
- Leuven, Belgium, Euroschool on Exotic Beams 25-years Symposium (30.08.2018)  
**Blaum, K.:**  
*Ion traps and storage rings in radioactive beam research.*
- Lisboa, Portugal, 15<sup>th</sup> Topical Workshop of the Stored Particles Atomic Physics Research Collaboration (SPARC'2018) (07.-11.09.2018)  
**Oreshkina, N. S.:**  
*Hyperfine splitting in simple ions for the search of the variation of fundamental constants.*
- Lisboa, Portugal, 19th International Conference Physics of Highly Charged Ions (HCI 2018) (03.-07.09.2018)  
**Crespo López-Urrutia, J. R.:**  
*Forbidden optical transitions in sympathetically cooled HCI: Applications to fundamental studies.*
- Livermore, CA, USA; "NIF and JLF User Group Meeting 2018"; Lawrence Livermore National Laboratory (04.-07.02.2018)  
**Giacinti, G.:**  
*Particle Acceleration at Supernova Shock Breakout.*
- Livermore, California, USA, National Ignition Facility Workshop on Nuclear Processes in Dense Plasmas (30.07.-01.08.2018)  
**Pálffy-Buß, A.:**  
*Nuclear excitation by electron capture in dense plasmas.*

- Livermore, USA, Applied Antineutrino Physics workshop (AAP18) (10.-11.10.2018)  
**Almazan, H.:**  
*The STEREO Experiment.*
- London, UK, NuPhys2018: Prospects in Neutrino Physics (19.-21.12.2018)  
**Smirnov, A. Y.:**  
*Neutrino mixing via the neutrino portal.*
- Los Angeles, USA, UCLA Dark Matter Conference 2018 (21.-23.02.2018)  
**Lindner, M.:**  
**DARWIN.**
- Mainz, Germany, Astroparticle Physics in Germany - Status and Perspectives (17.-19.09.2018)  
**Maneschg, W.:**  
*Coherent elastic neutrino nucleus scattering: recent results and perspectives.*  
**Rodejohann, W.:**  
*Probing models and new physics with future neutrino experiments.*  
**Hinton, J.A.:**  
**Building CTA.**
- Mainz, Germany, MITP Workshop „Bridging the Standard Model to New Physics with the Parity Violation Program at MESA" (23.-04.05.2018)  
**Lindner, M.:**  
**The CONUS coherent Neutrino scattering Experiment.**
- Mainz, Germany, SFB 1044 Workshop (01.10.2018)  
**Schwenk, A.:**  
*Chiral effective field theory for dark matter direct detection.*
- Montpellier, France; LUPM Laboratory (15.02.2018)  
**Giacinti, G.:**  
**Cosmic-Rays and Gamma-Rays as Probes of the Interstellar Turbulence.**
- Moscow, Russia, IV International Conference on Particle Physics and Astrophysics (22.-26.10.2018)  
**Schwingerheuer, B.:**  
*Lepton number violation search with neutrinoless double beta decay: overview over experiments.*
- Mumbai, India, IIT Workshop on Neutrino Physics and Astrophysics (14.-18.12.2018)  
**Lindner, M.:**  
**Neutrinos and Dark Matter.**
- München, Germany, 2018 MIAPP programme "The High Energy Universe" (26.02.-23.03.2018)  
**Hofmann, W.:**  
**Very High Energy Gamma Ray Astronomy.**
- Nagoya, Japan, 20<sup>th</sup> International Symposium on Very High Energy Cosmic Ray Interactions, ISVHECRI 2018 (21.-25.05.2018)  
**Dembinski, H.:**  
**LHCb: Recent and upcoming results related to cosmic ray interactions.**
- Nottingham, UK, 27th Annual Laser Physics Workshop (LPHYS'18) (16.-20.07.2018)  
**Pfeifer, T.:**  
*Imaging electronic and structural processes of molecules interacting with intense optical and XUV fields.*  
*Nonlinear response functions in intense optical and (intense) XUV laser fields.*  
**Di Piazza, A.:**  
*Implementing nonlinear Compton scattering beyond the local constant field approximation.*  
**Evers, J.:**  
*Shaping the Spectra of Short X-Ray Pulses by Mechanical Means.*  
**Harman, Z.:**  
*Laser-produced high-quality x-ray beams for medical purposes.*  
**Keitel, C. H.:**  
*Nuclear excitation and narrow-band hard-x-ray lasing.*  
*Under-the-Tunneling-Barrier Quantum Dynamics in Strong-Field Ionization.*  
**Pálffy-BuB, A.:**  
*Rabi oscillations of x-ray radiation between two nuclear ensembles.*  
**Tamburini, M.:**  
**Giant Collimated Gamma-Ray Flashes.**  
**Wistisen, T. N.:**  
**Experimental Evidence of Quantum Radiation Reaction in Aligned Crystal.**

- Obergurgl, Austria, HGSFP Winter School 2018 (25.-30.01.2018)  
**Harman, Z.:**  
*Quantum electrodynamics of bound systems.*
- Obergurgl, Austria, XXIst Symposium on Atomic, Cluster and Surface Physics 2018 (SASP2018), (11.-16.02.2018)  
**Ren, X.:**  
*Electron-impact induced ionization and fragmentation in hydrated biomolecule clusters.*
- Orsay, France, Workshop on Core-Collapse Supernova Neutrino Detection (01.07.2018)  
**Brdar, V.:**  
*Triangulation Method for Locating a Core-Collapse Supernova.*
- Osaka, Japan, HeKKSaGOn WG5 Preconference Discussion Meeting (11.04.2018)  
**Ott, C.:**  
*XUV-only nonlinear wave mixing and absorption spectroscopy.*
- Osaka, Japan, Muonium Workshop, University of Osaka (10.-11.12.2018)  
**Mooser, A.:**  
*A New Experiment for the measurements of the g-Factor of  $^3\text{He}^{2+}$ .*
- Ostuni, Brindisi, Italy, „Neutrino Oscillation Workshop 2018 (NOW2018)“ (09.-16.09.2018)  
**Lindner, M.:**  
*New neutrino states and interactions. (plenary talk)*
- Ostuni, Italy, 20<sup>th</sup> International Planck Conference (09.-16.09.2018)  
**Arcadi, G.:**  
*Leptogenesis and Dark Matter in Low Energy See-Saw.*
- Palm Springs, CA, USA, Conference on the Intersections of Particle and Nuclear Physics (28.05.-03.06.2018)  
**Knöpfle, K.T.:**  
*Recent Progress in Double Beta Decay and Latest Results from GERDA.*
- Paris, France, APC, Commemoration Day for Patrick Fleury (12.09.2018)  
**Völk, H. J.:**  
*Personal Memories on Patrick Fleury.*  
**Hofmann, W.:**  
*Patrick Fleury & Gamma ray astronomy with H.E.S.S. and CTA.*
- Paris, France, Conference on Ultra High Energy Cosmic Rays, UHECR 2018 (08.-12.10.2018)  
**Dembinski, H.:**  
*Report on Tests and Measurements of Hadronic Interaction Properties with Air Showers.*  
**Kirk, J.G.:**  
*Inductive particle acceleration.*
- Paris, France, International Conference on the History of Neutrino (05.-07.09.2018)  
**Akhmedov, E.:**  
*Quantum mechanical aspects and subtleties of neutrino oscillations.*  
**Smirnov, A. Y.:**  
*The Mikheyev-Smirnov-Wolfenstein (MSW) effect.*
- Paris, France, Workshop "Searching for the Sources of Galactic Cosmic Rays (11.-14.12.2018)  
**Aharonian, F.:**  
*Summary Talk.*  
**Giacinti, G.:**  
*Anisotropic Diffusion of Cosmic-Rays in the Galaxy.*  
**Hofmann, W.:**  
*Status of CTA.*  
**Hinton, J.A.:**  
*Very high energy gamma ray view of Galaxy.*  
**Casanova, S.:**  
*PeVatrons in the very high energy gamma ray sky: current status and perspective for CTA.*  
**Yang, R.:**  
*Cosmic rays from stellar clusters? Current status and perspectives with CTA.*
- Petrozavodsk, Russia, IX International Symposium on Exotic Nuclei (10.-15.09.2018)  
**Eliseev, S.:**  
*Penning-Trap Mass Spectrometry in Fundamental Physics.*
- Porto Palo di Capopassero, Sicilia, Italy, CRIS 2018 (18.-22.06.2018)  
**Zanin, R.:**  
*The Cherenkov Telescope Array Project: Overview and the Galactic Science Program.*

- Potsdam, Germany, Dynamics of Systems on the Nanoscale" (DySoN 2018) (08.-12.10.2018)  
**Dorn, A.:**  
*Hydration Dependence of Ionization and Fragmentation Reactions in Bio-Relevant Molecules.*
- Prague, Czech Republic, EPS DPP satellite workshop on High-field laser-plasma interaction (07.07.2018)  
**Di Piazza, A.:**  
*Implementing nonlinear Compton scattering beyond the local constant field approximation.*
- Quy Nhon, Vietnam, 14th Rencontres du Vietnam: Very High Energy Phenomena in the Universe (12.-18.08.2018)  
**Schoorlemmer, H.:**  
*Science with the Southern Gamma-ray Survey Observatory.*
- Rehovot, Israel, 5th European Conference on Trapped Ions (ECTI 2018), Weizmann Institute of Science (19.11.2018)  
**Blaum, K.:**  
*Precision atomic and nuclear mass measurements on trapped exotic species.*
- Rende, Calabria, Italy, Particle Acceleration and Transport: from the Sun to Extragalactic Sources (12.-16.11.2018)  
**Casanova, S.:**  
*Constraining the energetic particle content of SNRs through gamma-ray observations.*
- Riezlern, Austria, 39<sup>th</sup> Extreme Atomic Systems (EAS) Meeting (19.-22.02.2018)  
**Blättermann, A.:**  
*Strong-field spectroscopy.*  
**Borisova, G. D.:**  
*First results of XUV transient absorption spectroscopy in the ionization continuum of molecular hydrogen.*  
**Harth, A.:**  
*Attosecond timing with spectral resolution near resonances.*  
**Ott, C.:**  
*XUV-only nonlinear wave mixing and absorption spectroscopy.*  
**Pfeifer, T.:**  
*The transition from simple to complex strong-field quantum dynamics among bound states in the time domain.*  
**Cavaletto, S. M.:**  
*Reconstruction of strong-field-excited systems for deterministic quantum control.*  
**Heeg, K. P.:**  
*Controlling Excitation Dynamics of Mössbauer Nuclei.*  
**Oreshkina, N. S.:**  
*Fine and hyperfine structure of heavy muonic atoms.*
- Rome, Italy, 15<sup>th</sup> Marcel Grossmann Meeting (MG15) (01.-07.07.2018)  
**Tamburini, M.:**  
*Giant Collimated Gamma-Ray Flashes.*  
*Implementing Nonlinear Compton Scattering Beyond the Local Constant Field Approximation.*
- Rome, Italy, 7th Roma International Conference on Astroparticle Physics RICAP 18 (04.-07.09.2018)  
**Schoorlemmer, H.** on behalf of the HAWC collaboration:  
*The HAWC gamma-ray observatory: Results and Prospects.*  
**Aharonian, F.:**  
*Cosmic Ray PeVatrons: young stars versus dead stars.*
- Rome, Italy, ASI, AGILE 16th Science Workshop (18.05.2018)  
**Aharonian, F.:**  
*On the Importance of Morphological Studies to Reveal the Cosmic Ray Accelerators.*
- Rome, Italy, International Conference on Classical and quantum plasmas: matter under extreme conditions (05.-06.04.2018)  
**Di Piazza, A.:**  
*Quantum electrodynamic processes in plasmas.*
- Rome, Italy, PHAROS Workshop (24.-26.03.2018)  
**Zanin, R.:**  
*tMSPs: perspectives for CTA.*
- Salamanca, Spain, International Meeting on Fundamental Physics (IMFP18) (09.-13.04.2018)  
**Lindner, M.:**  
*Summary of direct searches for dark matter.*
- Santander, Spain, Dark Matter 2018 (25.-29.06.2018)  
**Cichon, D.:**  
*New results from the XENON1T experiment.*  
**Hasterok, C.:**  
*Direct Searches for Dark Matter with Noble Liquids.*

- Sarajevo, Bosnia and Herzegovina, ROOT User's workshop (10.-13.09.2018)  
**Dembinski, H.:**  
*User feedback from LHCb.*
- Seoul, Korea, 8th KIAS workshop on Particle physics and Cosmology (29.10.-02.11.2018)  
**Smirnov, A. Y.:**  
*Collective oscillations of supernova neutrinos.*
- Shanghai, China, The 14th International Conference on Electronic Spectroscopy and Structure (ICESS-14) (07.-12.10.2018)  
**Ott, C.:**  
*State-resolved bound-electron dynamics in strong fields*
- Shanghai, Republic of China, International Symposium on Light-Driven Dynamics, East China Normal University (07.-08.11.2019)  
**Pfeifer, T.:**  
*Dynamics of excited states driven by Strong Laser fields.*  
**Moshhammer, R.:**  
*Reaction Microscope experiments with short-pulse Lasers.*
- Shangsha, China, 5<sup>th</sup> International Symposium on Laser Interaction with Matter (LIMIS 2018) (11.-13.11.2018)  
**Li, J.-X.:**  
*Determination of the carrier-envelope phase of PW laser pulses.*
- Singapore, Julian Schwinger Centennial Conference (07.-12.02.2018)  
**Blaum, K.:**  
*Precision tests of QED with stored and cooled highly charged ions.*
- Singapore, NTU New Frontiers - Particles and Cosmology (05.-09.03.2018)  
**Lindner, M.:**  
*Conformal Extensions of the Standard Model.*
- Snowbird, Utah, USA, 48<sup>th</sup> Winter Colloquium on the Physics of Quantum Electronics (PQE-2018) (07.-12.01.2018)  
**Evers, J.:**  
*Sudden shifts sharpen x-ray pulses.*  
**Gontijo Campos, A.:**  
*Unveiling new analytical solutions to the Dirac equation.*  
**Kong, X.:**  
*From electromagnetically induced transparency to Autler-Townes splitting with x-rays.*  
**Liao, W.-T.:**  
*Generation of short hard X-ray pulses of tailored duration using a Mössbauer source.*  
**Pfeifer, T.:**  
*The time-domain response of autoionization and strong-field ionization.*
- St. Petersburg, Russia, Ioffe Institute's Research Council meeting (03.11.2018)  
**Aharonian, F.:**  
*Exploring Nonthermal Universe with Gamma Rays.*
- Stony Brook, NY USA, CFNS workshop on Forward Physics and Instrumentation from Colliders to Cosmic Rays (17.-19.10.2018)  
**Dembinski, H.:**  
*Proton-oxygen collisions at the LHC.*
- Strasbourg, France, GdR Neutrino Meeting (05.-06.10.2018)  
**Akhmedov, E.:**  
*Coherent scattering and macroscopic coherence: Implications for neutrino, DM and axion detection.*
- Szeged, Hungary, ELI Summer School 2018 (27.-31.08.2018)  
**Di Piazza, A.:**  
*High-energy QED (vacuum-polarization effects in intense laser beams) (invited lecture).*
- Szeged, Hungary, EUCALL Joint Foresight Topical Workshop (01.-05.07.2018)  
**Di Piazza, A.:**  
*Strong-field classical and quantum electrodynamics in intense laser fields.*
- Tallinn, Estonia, PACTS 2018: Particle, Astroparticle and Cosmology Tallinn Symposium (18.-22.06.2018)  
**Lindner, M.:**  
*Conformal Extensions of the Standard Model.*
- Tempe, AZ, USA, CXFEL Workshop: Attosecond electron dynamics to chemical physics (05.-06.02.2018)  
**Pfeifer, T.:**  
*Fundamental quantum dynamics in the time domain: Nonlinear spectroscopy and dynamical imaging of atoms and small molecules at FELs.*



- Tirupati, India, 7th Topical Conference of the Indian Society of Atomic and Molecular Physics (06.-08.01.2018)  
**Wolf, A.:**  
*Fast Ion Beams in a Cryogenic Storage Ring: Collisions and Internal Excitations.*
- Tokyo, Japan, Higgs Couplings (26.-30.11.2018)  
**Tenorth, V.T.:**  
*Dark Matter EFT with Extended Scalar Sector.*
- Traverse City, Michigan, USA, Trapped Charged Particles and Fundamental Physics, TCP2018 (30.09.-05.10.2018)  
**Köhler-Langes, F.:**  
*Stringent Tests of Bound-State QED.*  
**Wolf, A.:**  
*The Heidelberg Cryogenic Storage Ring CSR – Rotational Cooling and Electron Collisions of Molecular Ions.*
- Trento, Italy, Determination of the absolute electron (anti-)neutrino mass (26.-30.03.2018)  
**Rodejohann, W.:**  
*Importance of Neutrino Mass (Experiments).*
- Trento, Italy, ECT\* 25th Anniversary (31.08.2019)  
**Schwenk, A.:**  
*From fundamental interactions to structure and stars.*
- Trento, Italy, ECT\* Workshop “Exploring the role of electro-weak currents in Atomic Nuclei” (23.-27.04.2018)  
**Blaum, K.:**  
*Precision Penning-trap measurements for fundamental studies.*  
**Schwenk, A.:**  
*Effects of many-body currents in dark matter detection and WIMP-nucleus scattering.*
- Trento, Italy, ECT\* Workshop “New ideas in constraining nuclear forces”, Trento, Italy (05.06.2018)  
**Schwenk, A.:**  
*Status and challenges of chiral EFT calculations of nuclei and dense matter.*
- Trento, Italy, ECT\*, Determination of the absolute electron (anti-)neutrino mass (26.-30.03.2018)  
**Eliseev, S.:**  
*Penning Trap measurements to support direct neutrino mass determination: The case of H-3 and Ho-163.*
- Trieste, Italy, ICTP Advanced workshop “Physics of Atmospheric Neutrinos” (PANE-2018) (28.05.-01.06.2018)  
**Smirnov, A. Y.:**  
*Phenomenology of atmospheric neutrino oscillations.*
- Trieste, Italy, Winter College on Extreme Non-linear Optics, Attosecond Science and High-field Physics (05.-16.02.2018)  
**Di Piazza, A.:**  
*Radiation and radiation reaction in classical electrodynamics.*  
*Radiation and radiation reaction in quantum electrodynamics.*
- Tsukuba, Japan, KEK-PH winter 2018 (04.-07.12.2018)  
**Tenorth, V.T.:**  
*Extended Dark Matter EFT.*
- Valencia, Spain, The quest for new physics (12.2018)  
**Xu, X.:**  
*Searching for new physics in coherent neutrino scattering.*
- Vancouver, Canada, TRIUMF 50th Anniversary Symposium (17.07.2018)  
**Schwenk, A.:**  
*Always at the forefront - from NN experiments to ab initio theory.*
- Vulcano Island, Italy, VULCANO Workshop 2018 (20.-26.05.2018)  
**Aharonian, F.:**  
*The connection between gamma-rays and cosmic rays.*
- Wien, Austria, DISCRETE 2018 (26.-30.11.2018)  
**Trautner, A.:**  
*On the CP-odd basis invariants of the 2HDM.*
- Wien, Austria, International Atomic Energy Agency: Workshop Atomic Data (17.-21.11.2018)  
**Crespo López-Urrutia, J. R.:**  
*Reliable atomic data for fusion research and astrophysics: Benchmarking calculations for highly charged ions.*
- Wien, Austria, Meeting of IAEA Experimentalists' Network on Atomic and Molecular Data (19.-21.11.1018)  
**Wolf, A.:**  
*Electron–Ion Collision Experiments in Storage Rings: Cross Section Data and Fundamental Understanding.*

Wien, Austria, PSAS 2018 (14.-18.05.2018)

**Mooser, A.:**

*A new Experiment to measure the g-Factors of  $^3\text{He}^+$  and  $^3\text{He}^{2+}$ .*

Wuhan, PR China, Workshop HCI III „Precision Physics Based on Highly Charged Ions III and Topic Discussions on Precision Measurements” (23.04.2018)

**Crespo López-Urrutia, J. R.:**

*Cold highly charged ions for frequency metrology.*

Würzburg, Germany, DPG Spring meeting (19.-23.03.2018)

**Almazan, H.:**

*The STEREO Experiment: the Search for eV Sterile Neutrinos.*

**Eurin, G.**

*Radon mitigation for rare-event searches using surface treatments.*

**Hasterok, C.:**

*Latest Dark Matter Results of XENON1T.*

**Rink, T.:**

*CONUS - A new experiment to measure coherent elastic neutrino nucleus scattering at reactor site.*

**Roca, C.:**

*Calibration of the STEREO Experiment.*

**Tenorth, V.T.:**

*Extended Dark Matter EFT.*

Zürich, Switzerland, PPC2018 (08.2018)

**Marrodán Undagoitia, T.:**

*Dark matter searches with liquid xenon detectors.*

## At Other Institutes

Arcadi, G:

***From Simplified to Gauge Invariant Realizations of a light Pseudoscalar Portal.***

Laboratori Nazionali di Frascati, Italy (12.11.2018)

***WIMP Dark Matter: from Simplified to more Realistic Models.***

ITP Heidelberg, Germany (17.05.2018)

***Evading Dark Matter Direct Detection through light mediators and extended Dark Sectors.***

ITP Heidelberg, Germany (08.05.2018)

Bhadoria, S.:

***Laser-driven shock-acceleration of ions in collisional and ultra-relativistic regime.***

Darmstadt, Germany, GSI Helmholtz Centre for Heavy Ion Research, Atomic Physics Seminar GSI (04.07.2018)

Blaum, K.:

***Precision Experiments with Stored and Cooled Ions, Open Academy Lecture.***

Royal Swedish Academy of Sciences, Stockholm, Sweden (21.02.2018)

***Precision Experiments with Stored and Cooled Ions.***

Allgemeines Physikalisches Kolloquium, Westfälische Wilhelms-Universität Münster, Germany (19.04.2018)

Physikalisches Kolloquium, Technische Universität Dresden, Germany (19.06.2018)

Physikalisches Kolloquium, Johann Wolfgang Goethe-Universität Frankfurt, Frankfurt am Main, Germany (20.06.2018)

***Rydberg Lecture 2018: Physics with Penning traps towards the precision limit.***

Rydberg Lecture Hall, Physics Department, Lund University, Sweden (10.10.2018)

***Physics with Penning traps towards the precision limit.***

Nuclear Science Seminar, National Superconducting Cyclotron Laboratory (NSCL), Michigan State University, USA (31.10.2018)

Physics Seminar, Hefei National Laboratory for Physical Sciences at the Microscale, Hefei, China (26.11.2018)

Brdar, V.:

***Neutrino Masses, Dark Matter and Leptogenesis with sub-TeV New Physics.***

Karlsruhe, Germany, Theory Group Seminar at KIT (25.07.2018)

Buck, C.:

***Recent results from the Stereo experiment.***

Heidelberg, Germany, Teilchenkolloquium (10.07.2018)

Celli, S.:

***Propagation and radiation of accelerated particles in young supernova remnants***

Adelaide, Australia, University of Adelaide, Astrophysics Seminar (27.11.2018)

Crespo López-Urrutia, J. R.:

***Cold highly charged ions as spectroscopic probes of fundamental interactions.***

Vienna, Austria, TU Wien, Institute of Applied Physics (06.03.2018)

***How to make, trap and observe microscopic star plasmas in the laboratory, and use them as clocks.***

Heidelberg, Germany, Max Planck Institute für Astronomy (13.04.2018)

***Ultimate astrophysical ions for ultra-precise atomic clocks.***

Shanghai, PR China, Institute of Modern Physics (27.04.2018)

***Spectroscopy of highly charged ions.***

Braunschweig, Germany, Kick-off meeting CC4C Network (20.06.2018)

Debierre, V.:

***Hydrogen-like systems from low to high Z: van der Waals interactions and the bound electron g-factor.***

Paris, France, Laboratoire Kastler-Brossel, Séminaire général du Laboratoire Kastler-Brossel (09.10.2018)

Eurin, G.:

***Latest results from XENON1T and future prospects for XENONnT.***

University of Edinburgh, Experimental Particle Physics seminar (26.10.2018)

Giacinti, G.:

***Cosmic-Rays and Gamma-Rays as Probes of the Interstellar Turbulence.***

Montpellier, France, LUPM Laboratory, Montpellier University, Seminar (15.02.2018)

**Goertz, F.:**

***All Scalars from one Source: Axiflavor-Higgs Unification.***

University Mainz, Germany, Theorie-Palaver (16.10.2018)

***Extended Dark Matter EFT.***

Bad Honnef, Germany, New Physics at the LHC Research Group Meeting (02.10.2018)

***Composite Higgs theory.***

Obergurgl, Austria, Third Alpine LHC Physics Summit (20.04.2018)

***Higgs EFT 2018.***

Mainz, Germany, Extended Dark Matter EFT (17.04.2018)

***Open questions of the standard model.***

University Heidelberg, Germany, Colliding Pizza Seminar (08.01.2018)

**Grieser, M.:**

***The Cryogenic Storage Ring CSR.***

Seminar, Forschungszentrum Jülich, Jülich, Germany (25.01.2018)

Accelerator Seminar, GSI Darmstadt, Darmstadt, Germany (15.02.2018)

***Stored Ion Beam Experiments in AMO Physics: From Highly Charged Ions to Molecules.***

Inter-University Accelerator Centre (IUAC), New Delhi, India (10.01.2018)

***Molecular Interactions in Dilute Media studied with Fast Ion Beams in the Heidelberg Cryogenic Storage Ring.***

Astronomical Colloquium der Universität Heidelberg (05.06.2018)

***The Heidelberg Cryogenic Storage Ring CSR: Rotational Cooling and Electron Collisions of Molecular Ions.***

HIC for FAIR Colloquium, Universität Gießen (21.11.2018)

**Harth, A.:**

***Attosecond timing with spectral resolution: what comes next?***

Zürich, Switzerland, Seminar ETH Zürich (09.04.2018)

**Hasterok, C.:**

***The XENON Dark Matter Project: Current Status and Future Prospects.***

Mainz, Germany, Astroparticle Physics in Germany (18.09.2018)

**Heeg, K. P.:**

***Cavity QED and coherent control of nuclear resonances with hard x-rays.***

Innsbruck, Austria, Institut für Theoretische Physik (Universität Innsbruck), Seminar talk (14.08.2018)

***X-ray quantum optics with nuclear resonances.***

Jena, Germany, Helmholtz Institute Jena, Theoretical Atomic Physics Group Seminar (22.05.2018)

**Hofmann, W.:**

***Der Himmel über Namibia in einem neuen Licht: Astronomie mit Gammastrahlen.***

Heidelberg, Germany, Eröffnungsvortrag MPG Jahreshauptversammlung (12.06.2018)

***The Galaxy viewed in very high energy gamma rays.***

Zürich, Switzerland, Schrödinger Kolloquium (26.03.2018)

Darmstadt, GSI, Kolloquium (29.05.2018)

**Jardin-Blicq, A.:**

***A HAWC view of the multi-TeV sky.***

Padova, Italy, INFN, seminar talk (16.07.2018)

**Keitel, C. H.:**

***Extremely high-intensity laser interactions with fundamental quantum systems.***

Hamburg, Germany, Deutsches Elektronen-Synchrotron (DESY), Particle and Astroparticle Physics Colloquium, also integrated as plenary talk in the Workshop on "Probing strong-field QED in electron-photon interactions" (21.08.2018)

**Kirk, J.G.:**

***Inductive particle acceleration.***

Garching, Munich Institute for Astro- and Particle Physics (15.03.2018)

***Gamma-ray flares from pulsar wind nebulae.***

Jerusalem, Israel, Racah Institute of Physics (01.05.2018)

***Pulsar winds.***

University of Heidelberg, Joint Astronomical Colloquium (26.06.2018)

**Kong, X.:**

***From electromagnetically induced transparency to Autler-Townes splitting with x-rays.***

Menlo Park, California, USA, SLAC National Accelerator Laboratory, Photon Science Seminar (22.01.2018)

College Station, Texas, USA, Texas A&M University, seminar (16.01.2018)

**Kumar, N.:**

***Particle acceleration and short-wavelength radiation generation in plasmas.***

Amsterdam, Netherlands, Advanced Research Center for Nanolithography, Seminar (01.08.2018)

**Lentrod, D. S.:**

***Effective few-mode theories for ab-initio cavity QED.***

Vienna, Austria, Institute for Theoretical Physics, Vienna University of Technology, Seminar for Theoretical Physics (07.11.2018)

**Lindner, M.:**

***Direct detection of dark matter.***

Colorado Springs, Colloquium at USAFA (01.11.2018)

Universität Würzburg, Kolloquium (05.02.2018)

***Erfolgreicher Nachweis von kohärenten Neutrinos im Kernkraftwerk Brokdorf.***

Kerntechnische Gesellschaft (KTG) - Sektion NORD (17.10.2018)

***Results from XENON1T and outlook on XENONnT.***

Gran Sasso Laboratory, Assergi, Italy (01.10.2018)

***Helles Licht und dunkle Teilchen.***

DAI Heidelberg (10.09.2018)

***The XENON Dark Matter Search: Status and Prospects.***

Kolloquium am Karlsruhe Institute of Technology (06.07.2018)

***Is the WIMP paradigm going strong?***

Heidelberg University (03.04.-06.04.2018)

***Neutrinos: Vom Geisterteilchen zur Anwendung.***

AKW Brokdorf (12.03.2018)

**Michel, N.:**

***Status of theoretical calculations.***

Villigen, Switzerland, Paul Scherrer Institut, MuX Collaboration Meeting (05.11.2018)

***Hyperfine structure of heavy muonic atoms.***

Villigen, Switzerland, Paul Scherrer Institute, Particle Theory Seminar (14.03.2018)

**Mooser, A.:**

***A New Experiment for the measurement of the g-Factor of  $^3\text{He}^{2+}$ .***

Colloquium at KEK/J-Parc, Tokai, Japan (14.12.2018)

**Moshhammer, R.:**

***COLTRIMS Experiments with Lasers.***

Mainz, Germany (25.09.2019)

**Oreshkina, N. S.:**

***Fine and Hyperfine Structure of Heavy Muonic Atoms: Towards the determination of nuclear parameters.***

Jena, Germany, Helmholtz Institute Jena, Institute's Seminar (24.10.2018)

***Search for the variation of fundamental constants in highly charged ions.***

Mainz, Germany, Helmholtz Institute Mainz, Matter-AntiMatter Asymmetry Section Seminar (29.06.2018)

**Ott, C.:**

***Multi-electron quantum dynamics in weak and strong fields.***

Darmstadt, Germany, GSI, Atomphysik Seminar (25.4.2018)

***Resonant nonlinear ultrafast dynamics in atoms and molecules driven by an intense XUV free-electron laser.***

Orlando (FL), USA, CREOL University of Central Florida, Special Seminar (22.6.2018)

**Pálffy-Buß, A.:**

***Quantum control and dynamics with x-rays.***

Erlangen, Germany, Friedrich-Alexander-Universität Erlangen-Nürnberg, Physics Colloquium (19.12.2018)

Hamburg, Germany, Max Planck Institute for the Structure and Dynamics of Matter, Physics Seminar (06.06.2018)

***Coherent light interacting with nuclei: from ultraviolet to gamma rays.***

Stavanger, Norway, University of Stavanger, Physics Seminar (27.09.2018)

***Towards a nuclear clock with  $^{229}\text{Th}$ .***

Braunschweig, Germany, Technische Universität Braunschweig, Physics Colloquium (19.06.2018)

***$^{229}\text{Th}$  electronic bridge in VUV-transparent crystals.***

Vienna, Austria, Atominstut Technische Universität Wien, Seminar (20.02.2018)

**Pfeifer, T.:**

***Listening to the ultrafast chat of two excited electrons — And asking them some quick Physics questions.***

Aarhus, The Netherlands, Physics Colloquium Aarhus University (24.10.2018)

Hamburg, Germany, DESY Photon Science Colloquium (30.11.2018)

***Quantum Dynamics and its Control with Strong Laser Fields Seminar.***

Shanghai, Republic of China, ECNU (04.11.2018)

**Schmelling, M.:**

***Physics Highlights from the LHCb Experiment.***

Garching, Germany, IPP Institutskolloquium (27.04.2018)

**Schnorr, K.:**

***Imaging Strong-Field Induced Dynamics in C60 via X-Ray Scattering.***

Hamburg, Germany, DESY (24.05.2018)

**Sikora, B.:**

***High-precision theory of the g-factor of bound fermions.***

Jena, Germany, Helmholtz Institute Jena, Internal Group Seminar, Theoretical Atomic Physics Group (16.10.2018)

**Simgen, H.:**

***Results from the direct search for dark matter with the XENON1T experiment.***

Heidelberg University, Teilchenkolloquium (17.07.2018)

**Smirnov, A. Y.:**

***Strange effects in neutrino oscillations.***

Suwon, Korea, Seminar at Sungkyunkwan University (23.10.2018)

Daejeon, Korea, Seminar at CTPU (19.10.2018)

Copenhagen, Denmark, Colloquium Niels Bohr Institute (03.03.2018)

***Neutrino mixing via the neutrino portal.***

Seoul, Korea, Seminar at KIAS (16.10.2018)

**Tenorth, V.T.:**

***Extended Dark Matter EFT(s).***

Osaka, Japan, Particle Physics Theory Seminar (03.12.2018)

**Trautner, A.:**

***CP violation as a consequence of another Symmetry.***

Heidelberg, Germany, Teilchentee, seminar joint with MPIK at Heidelberg University (25.10.2018)

**Vogl, S.:**

***FIMPs and friends: Probing dark matter with long-lived particles at the LHC.***

Hamburg, Germany, DESY, Theory Seminar (23.04.2018)

**Xu, X.:**

***BSM physics in neutrino scattering.***

Blacksburg, USA, Virginia Tech (08.2018)

University of Maryland, College Park, USA (08.2018)

Bari, Italy, INFN (04.2018)

***Supernova neutrino triangulation.***

Columbus, USA, Ohio State University (08.2018)

***Coherent neutrino scattering.***

Beijing, China, Tsinghua University (07.2018)

Beijing, China, Institute of High Energy Physics (07.2018)

**Zanin, R.:**

***Gamma-ray emission from pulsars and their environments: an experimental perspective.***

Dwingeloo, NL, ASTRON, Colloquium (05.07.2018)

# Invited Talks 2019

## At Conferences and Symposia

Aachen, Deutsche Physikalische Gesellschaft (DPG) Frühjahrstagung (25.-29.03.2019)

**Hasterok, C.:**

*The XENON Dark Matter Project: Latest Results and Future Prospects.*

**Maneschg, W:**

*Recent developments in low energy neutrino physics: chances and challenges.*

**Roca, C.:**

*The Search for eV Sterile Neutrinos with the STEREO Experiment.*

Adelaide, Australia, CTA Linkages in Australia Workshop (28.-29.11.2019)

**Celli, S.:**

*Particle escape from middle-aged SNRs and related gamma-ray emission.*

Alberta, Canada, Lake Louise Winter Institute 2019, Lake Louise (13.02.2019)

**Blaum, Klaus:**

*What can one learn from precise atomic measurements in Penning traps?*

Ameland Island, The Netherlands, 2<sup>nd</sup> Summer School: Search for new physics with low-energy precision tests (16.-21.06.2019)

**Crespo López-Urrutia, J. R.:**

*Lecture series on highly charged ions.*

Amsterdam, Netherlands, International Workshop on EUV and Soft X-ray Sources, ARCNL (08.11.2016)

**Crespo López-Urrutia, J.R.:**

*Charge-state resolving analysis of EUV spectra using electron beam ion traps.*

Amsterdam, Netherlands, Meeting of the "Higgs as probe and portal" group at NIKHEF (24.05.2019)

**Helmboldt, A.:**

*Conformal realization of the neutrino option and gravitational waves.*

Ann Arbor, Michigan, USA, PIMKIO Workshop, University of Michigan (07.03.2019)

**Trautner, A.:**

*Cold cosmic neutrinos and the expansion history of the Universe.*

Bad Honnef, Germany, 698. WE-Heraeus-Seminar "Massive Neutrinos" (08.-11.07.2019)

**Eliseev, S.:**

*Penning-Trap Mass Spectrometry (PENTATRAP) and Neutrino Mass (ECHO Project).*

**Marrodán Undagoitia, T.:**

*Neutrino astrophysics in liquid xenon detectors.*

**Rodejohann, W.:**

*Neutrino Mass and Lepton Mixing.*

Bad Honnef, Germany, 705. WE-Heraeus-Seminar "Frontier on Size-Selected Cluster Research: Bridging the Gap" (29.09.-04.10.2019)

**Wolf, A.:**

*Molecular and Cluster Ions in a Cryogenic Storage Ring – from internal cooling to merged beams.*

Bad Honnef, Germany, German Astroparticle Community Meeting, 6. KAT Strategietreffen (05.-06.12.2019)

**Hinton, J.A.:**

*The Southern Wide-Field Gamma-ray Observatory.*

Bad Honnef, Germany, WEH School on Plasma Astroparticle Physics 2019 (21.-25.01.2019)

**Schmelling, M.:**

*Heavy Quark Physics with LHCb.*

Barcelona, Spain, HEPRO VII conference (09.-12.07.2019)

**Zanin, R.:**

*The Crab flares: lessons learnt and future perspectives.*

- Bari, Italy, 27<sup>th</sup> International Workshop in Weak Interactions and Neutrinos (WIN2019) (02.-08.06.2019)  
**Bischer, I.:**  
*General Neutrino Interactions from an Effective Field Theory perspective.*  
**Lindner, M.:**  
*Invited summary and outlook talk.*  
**Rink, T.:**  
*CONUS - Detecting elastic neutrino nucleus scattering in the fully coherent regime with reactor neutrinos. Leptogenesis and low-energy CP violation in a type-II-dominated left-right seesaw model.*  
**Roca, C.:**  
*The Search of eV Sterile Neutrinos with the STEREO Experiment.*  
**Rodejohann, W.:**  
*Neutrino Physics: Theory.*
- Berlin, Germany, 23. Physikerinnentagung. Frauen in der Physik: Forschung, Karrierewege und Profilierung (14.-17.11.2019)  
**Pálffy-BuB, A.:**  
*Where atomic nuclei meet quantum optics and metrology. (plenary talk)*
- Berlin, Germany, THOR workshop (07.07.2019)  
**Zanin, R.:**  
*The interstellar medium from the perspective of the gamma-ray community.*
- Berlin, Germany, WE-Heraeus-Symposium "Measurements at the Limit" (07.11.2019)  
**Blaum, K.:**  
*High-precision atomic mass measurements.*
- Blois, France, Rencontres de Blois (02.-07.06.2019)  
**Schoppmann, S.:**  
*Search for eV Sterile Neutrinos – The Stereo Experiment.*
- Bologna, Italy, CTA Symposium (06.-09.05.2019)  
**Hofmann, W.:**  
*CTA – Setting the stage.*  
**Ruiz Velasco, E.L.:**  
*Discovery of Late-Time Very High Energy Emission from a Gamma-ray Burst Afterglow.*
- Dalian, China, International Conference on the Applications of the Mössbauer Effect (31.08.-06.09.2019)  
**Evers, J.:**  
*X-ray quantum optics with Mössbauer nuclei.*
- Darmstadt, Germany, EMMI Physics Days 2019 (19.11.2019)  
**Arapoglou, I.:**  
*The ALPHATRAP g-factor experiment: testing bound-state QED using highly-charged ions.*
- Darmstadt, Germany, Workshop on the design and optimization of low energy ion and antiproton facilities, GSI, Darmstadt (06.02.2019)  
**Grieser, M.:**  
*The Cryogenic Storage ring CSR.*
- Deauville, France, The XXXI<sup>st</sup> International Conference on Photonic, Electronic and Atomic Collisions (ICPEAC) (23.-30.07.2019)  
**Ren, X.:**  
*Observation of intermolecular Coulombic decay (ICD) in water-tetrahydrofuran induced by electron-impact.*  
**Wolf, A.:**  
*Rotational level specific dissociative recombination rate constants measured in a cryogenic storage ring.*
- Dolní Břežany, Czech Republic, ELI User Workshop on Laser Wakefield Acceleration and Applications (24.-25.10.2019)  
**Tamburini, M.:**  
*Polarized laser-wakefield-accelerated kiloampere electron beams.*
- Dolní Břežany, Czech Republic, The 3<sup>rd</sup> International Conference on Extreme Light 2019 (ICEL 2019) (21.-25.10.2019)  
**Tamburini, M.:**  
*QED beyond the local field approximation in extreme laser pulses.*
- Dolní Břežany, Czech Republic, Workshop: Science with coherent XUV sources at ELI Beamlines (06.-07.05.2019)  
**Ott, C.:**  
*Nonlinear XUV-excited-state electron dynamics in rare gas atoms.*
- Dubai, United Arab Emirates, Global Scientific Event on Atomic, Molecular, and Optical Physics (GSEAMO-2019) (17.-18.06.2019)  
**Wen, M.:**  
*Electron acceleration by radially-polarized laser pulses in plasma micro-channels and from solid wires. (hot topic)*



- Erice, Italy, International School of Nuclear Physics (16.-24.09.2019)  
**Schwingerheuer, B.:**  
*Search for neutrinoless double beta decay of  $^{76}\text{Ge}$  with the GERDA experiment.*
- Erice, Sicily, Italy, Workshop on "Star Mergers, Dark Matter, Neutrinos in Nuclear, Particle and Astro-Physics and in Cosmology" (16.-24.09.2019)  
**Lindner, M.:**  
*Coherent neutrino scattering.*
- Florence, Italy, European conference on antic and molecular physics, ECAMP 13 (08.-12.04.2019)  
**Moshhammer, R.:**  
*AMO-Experiments with Reaction Microscopes at FLASH. (plenary talk)*
- Frankfurt, Germany, Wilhelm und Else Heraeus Seminar #702: Otto Stern's Molecular Beam Research and its Impact on Science (03.09.2019)  
**Blaum, K.:**  
*Precision Physics in Penning Traps Using the Continuous Stern-Gerlach-Effect.*
- Fukuoka, Japan, Meeting of the Physical Society of Japan (14.03.2019)  
**Hofmann, W.:**  
*The Cherenkov Telescope Array.*
- Gaithersburg, Maryland, USA, 20<sup>th</sup> International Conference on Atomic Processes in Plasmas (09.-12.04.2019)  
**Harman, Z.:**  
*Narrow-band hard-x-ray lasing with highly charged ions.*
- Garching, Germany, ESO Workshop "The Very Large Telescope in 2030" (17.-20.06.2019)  
**Hofmann, W.:**  
*Gamma-ray astronomy in the energy range of few  $10^{10}$  eV to few  $10^{14}$  eV.*
- Garching, Germany, Workshop on Gravity, Information and Fundamental Symmetries (11.2019)  
**Marrodán Undagoitia, T.:**  
*Dark Matter and neutrino physics with liquid xenon detectors.*
- Geneva, Switzerland, CERN Theory BSM Forum (31.01.2019)  
**Brdar, V.:**  
*Low Scale Left-Right Symmetry and Naturally Small Neutrino Mass.*
- Geneva, Switzerland, ISOLDE-EPIC Workshop at CERN, 03.12.2019  
**Grieser, M.:**  
*A new ISOLDE storage ring - ISR.*
- Geneva, Switzerland, Workshop on Scale Invariance in Particle Physics and Cosmology (28.01.-01.02.2019)  
**Brdar, V.:**  
*The Conformal Realization of the Neutrino Option and its Gravitational Wave Signature.*  
**Helmboldt, A.:**  
*Conformal realization of the neutrino option and gravitational waves.*  
**Lindner, M.:**  
*Conformal extensions of the standard model.*
- Glasgow, UK, INPC 2019, 27th International Nuclear Physics Conference (01.08.2019)  
**Blaum, K.:**  
*Novel measurement techniques in precision mass spectrometry of rare nuclides.*
- Granada, Spain, 22nd Planck conference (03.-07.06.2019)  
**Trautner, A.:**  
*Vector-like chiral" 4th family to explain  $(g - 2)$  and  $b \rightarrow s\mu\mu$ .*

Gyeongju, Republic of Korea, LPhys'19 – The 28<sup>th</sup> Annual International Laser Physics Workshop (08.-12.07.2019)

Ott, C.:

*Nonlinear XUV absorption spectroscopy with a free-electron laser.  
Attosecond Time Delays in Resonant Photoexcitation.*

Stooß, V.:

*From Absorption Spectra to the Strong-Field Driven Dipole Response.*

Chen, Y.:

*Polarized positron beams via intense two-color laser pulses.*

Di Piazza, A.:

*On the local-constant-field approximation in strong-field QED at low and high energies.*

Lentrodt, D. S.:

*Coherent X-Ray-Optical Control of Nuclear Dynamics with Zeptosecond Phase-Stability.*

Lv, Q.:

*The Computational-QFT approach for QED processes in strong laser fields.*

Wen, M.:

*Polarized Electron Beam Acceleration in Laser Wakefield.*

Hamburg, DESY Theory Workshop (24.-27.09.2019)

Doering, C.:

*Inelastic dark matter nucleus scattering.*

Hamburg, Germany, DESY, Workshop New Scientific Capabilities at European XFEL (25.-27.03.2019)

Moshhammer, R.:

*Ultrafast Atomic and Molecular Dynamics – Capabilities at EuXFEL.*

Crespo López-Urrutia, J. R.:

*70-keV-hard bound-state quantum electrodynamics and soft x-ray purely photo-ionized low-density plasmas at XFEL.*

Pfeifer, T.:

*Watching and steering electrons with intense optical and free-electron lasers.*

Hamburg, Germany, DESY, Workshop Soft x-ray science at PETRA (25.-26.09.2019)

Crespo López-Urrutia, J. R.:

*Soft x-rays on radiation-hard ions accurately benchmarking electron-hole theory.*

Arcadi, G.:

*Accurate relativistic treatment of cosmological evolution of real scalar DM.*

Hamburg, Germany, FLASHForward Collaboration and Scientific Advisory Committee Meeting (26.-28.11.2019)

Tamburini, M.:

*Polarized wakefield-accelerated kiloampere electron beams.*

Hamburg, Germany, New Scientific Capabilities at European XFEL (25.-27.03.2019)

Evers, J.:

*Nuclear quantum optics at XFELs.*

Hamburg, Germany, Satellite Meeting to the DESY Photon Science Users' Meeting 2019: "Light-Matter Interaction: Recent Advances in Theory" (24.01.2019)

Keitel, C. H.:

*Quantum Tunneling Time: How real is it?*

Hangzhou, China, 13<sup>th</sup> International West Lake Symposium on Extreme Radiation Physics (IWLS-ERP19) (04.-06.05.2019)

Li, J.-X.:

*Ultrarelativistic electron and positron beams polarization in single-shot interaction with an ultraintense laser pulse and the polarization determination.*

Lv, Q.:

*The Computational-QFT approach for the Strong-Field QED Processes. (plenary talk)*

Tamburini, M.:

*Giant collimated gamma-ray flashes.*

Wen, M.:

*Laser acceleration of spin polarized electron beam. (hot topic)*

Hangzhou, China, Symposium on Quantum Computing and Quantum Optics II (24.-26.05.2019)

Evers, J.:

*Simulating control fields for nuclear quantum optics using mechanical motion.*

Hannover, Germany, Quantum Metrology and Physics beyond the Standard Model (11.-14.06.2019)

Crespo López-Urrutia, J. R.:

*Possibilities for BSM physics tests with highly charged ions in the VUV region.*

- Heidelberg, Germany, HeKKSaGOn University Alliance – The 7th German-Japanese University Presidents' Conference (12.-13.09.2019)  
**Ott, C.:**  
*XUV-induced two-electron strong-coupling dynamics in helium.*
- Heidelberg, Germany, HeKKSaGOn WG4 Preconference Discussion Meeting (11.09.2019)  
**Ding, T.:**  
*Transient absorption spectroscopy of neon at FLASH.*
- Heidelberg, Germany, Nucar Collaboration Meeting, MPI Kernphysik, (07.03.2019)  
**Grieser, M.:**  
*New technical ideas for CRYRING.*  
**Kreckel, H.:**  
*Astrochemical studies at the Cryogenic Storage Ring.*
- Heidelberg, Germany, PyGamma 2019 Workshop (18.-23.03.2019)  
**Dembinski, H.:**  
*Python in high-energy physics.*  
**Zanin, R.:**  
*Python and open-data for gamma-ray astronomy.*
- Heidelberg, Germany, SFB ISOQUANT PI Meeting 2019 (17.05.2019)  
**Sturm, S.:**  
*Magnetic moments and electron binding energies in highly charged ions.*
- Helsinki, Finland, 7th RISE Collaboration workshop: NonMinimalHiggs (27.-29.05.2019)  
**Alanne, T.:**  
*Low-scale leptogenesis via extended scalar sectors.*
- Jaca, Spain, Low Radioactivity Techniques (LRT) workshop (19.-23.05.2019)  
**Eurin, G.:**  
*Developments in surface background removal for the DARWIN liquid xenon detector.*  
**Simgen, H.:**  
*Understanding and suppressing radioactive noble gas background in liquid xenon detectors.*
- Karlsruhe, Germany, CORSIKA Cosmic Ray Simulation Workshop Karlsruhe (17.-20.6. 2019)  
**Bernlöhr, K.:**  
*CORSIKA and IACTs - Cherenkov light simulations for Imaging Atmospheric Cherenkov Telescopes.*  
**Dembinski, H.:**  
*Proton-Oxygen collisions at the LHC for air shower research.*
- Kitzbühel, Austria, Humboldt-Kolleg-Conference (06.2019)  
**Marrodán Undagoitia, T.:**  
*Dark matter searches with liquid xenon detectors.*
- Kushiro, Hokkaido, Japan, International Symposium on Ultrafast Intense Laser Science (ISUILS2019) (04.-09.08.2019)  
**Li, J.-X.:**  
*Polarized leptons and Gamma-rays with extreme laser pulses.*
- La Thuile, Italy, 53rd Rencontres de Moriond, Electroweak Interactions and Unified Theories (16.-23.03.2019)  
**Buck, C.:**  
*Latest Results of the CONUS reactor neutrino experiment.*  
**Goertz, F.:**  
*All Scalars from one Source: Axiflavor-Higgs Unification.*
- La Thuile, Italy, Les Rencontres de Physique de la Vallée d'Aoste (La Thuile 2018) (25.02.-03.03.2019)  
**Eurin, G.:**  
*Search for dark matter with the XENON1T detector.*
- L'Aquila, Italy; 5th "Cosmic Ray Anisotropy Workshop" (CRA 2019) (07.-11.10.2019)  
**Giacinti, G.:**  
*Cosmic-Ray Anisotropy and Extended Gamma-Ray Emissions as Probes of Cosmic-Ray Transport.*
- Lerici, Italy, NEEC Symposium Time Domain control of atomic shell from nuclear excitation (07.-09.10.2019)  
**Crespo López-Urrutia, J. R.:**  
*Experimental searches for electronic transitions with strong nuclear couplings in highly charged ions.*  
**Pálffy-BuB, A.:**  
*Nuclear excitation by electron capture - an overview.*
- London, UK, Royal Society Meeting, Advances in hydrogen molecular ions:  $H_3^+$ ,  $H_5^+$  and beyond (21.01.2019)  
**Kreckel, H.:**  
*Astrochemical studies at the Cryogenic Storage Ring.*

- London, UK, University College London, R-MADAM 2019 (24.-26.06.2019)  
**Pfeifer, T.:**  
*Intense light–matter interaction: Spectroscopy and control of excited states in strong laser fields.*
- Lyon, France, EWASS 2019 (European Week of Astronomy and Space Science) (24.06.2019)  
**Giacinti, G.:**  
*TeV Cosmic-Rays and Gamma-Rays as Probes of Interstellar Magnetic Fields.*
- Madison, WI, USA; 36th International Cosmic Ray Conference (ICRC 2019) (24.07.-01.08.2019)  
**Giacinti, G.:**  
*Gamma-Ray Insights into Cosmic-Ray Transport.*
- Madrid, Spain, Baryon and Lepton Number Violation 2019 (21.-24.10.2019)  
**Blasi, S.:**  
*Axions and Lepton Flavor Violation.*
- Madrid, Spain, NANOCOSMOS meeting: Energetic Processing of Large Molecules, EpoLM-4 (04.-06.03.2019)  
**Wolf, A.:**  
*Rotational Cooling and Electron Collisions of Molecular Ions at the Heidelberg Cryogenic Storage Ring CSR.*
- Mainz, Germany, MITP workshop “Indirect Searches for New Physics Across the Scales” (01.06.2019)  
**Brdar, V.:**  
*Dark Matter Models with X-ray and gamma-ray signatures.*
- Mainz, Germany, Nuclear Physics in Astrophysics IX (19.09.2019)  
**Schwenk, A.:**  
*The nuclear chart and equation of state from nuclear forces.*
- Mainz, Germany, PLATAN 2019, International Conference Merger of the Poznan Meeting on Lasers and Trapping Devices in Atomic Nuclei Research and the International Conference on Laser Probing, Helmholtz Institute Mainz, Johannes Gutenberg University (24.05.2019)  
**Blaum, K.:**  
*Amazing progress in the field of lasers (probing) and trapping. (concluding Talk)*  
**Mooser, A.:**  
*A new Experiment to measure the g-Factors of  $^3\text{He}^+$  and  $^3\text{He}^{2+}$ .*
- Manchester, SKA Global Headquarters, UK, A Centenary of Astrophysical Jets: Observation, Theory, and Future Prospects (23.-26.07.2019)  
**Hinton, J.A.:**  
*TeV Gamma-rays from jets.*
- Manchester, UK, XXV International symposium PASCOS 2019 (01.-05.07.2019)  
**Smirnov, A. Y.:**  
*Neutrinos: Theory and Experiment.*
- Menlo Park, California, USA, Physics Opportunities at a Lepton Collider in the Fully Nonperturbative QED Regime Workshop (07.-09.08.2019)  
**Di Piazza, A.:**  
*Perturbation theory in strong field QED.*  
**Tamburini, M.:**  
*Strong-field QED simulations beyond the local constant field approximation.*
- Metz, France, 20th International Symposium on Correlation, Polarization and Ionization in Atomic and Molecular Collisions (COPIAMC) (01.-03.08.2019)  
**Ott, C.:**  
*Nonlinear XUV absorption spectroscopy of excited-state electron dynamics in atoms.*  
**Ren, X.:**  
*Water acts as a catalyst for electron-driven chemical reaction in biochemically relevant hydrogen-bonded systems.*
- Milan, Italy, 46<sup>th</sup> European Physical Society Conference on Plasma Physics (EPS 2019) (08.-12.07.2019)  
**Tamburini, M.:**  
*Giant collimated gamma-ray flashes.*
- Milan, Italy, EPS DPP satellite workshop on High-Field Laser-Plasma Interaction (HFLPI 2019) (13.07.2019)  
**Podszus, T.:**  
*High-energy behavior of strong-field QED in an intense plane-wave.*
- Milwaukee, USA, Annual Meeting of the APS Division of Atomic, Molecular and Optical Physics (DAMOP), (27.-31.05.2019)  
**Dorn, A.:**  
*Electron Impact Ionization and Fragmentation of Biochemically Relevant Molecules: Hydration Dependence.*

- Montpellier, France; CFRCOS2: Deuxième atelier de la communauté française du rayonnement cosmique" conference (13.-15.11.2019)  
**Giacinti, G.:**  
*Theory of cosmic ray propagation in the interstellar medium. (review talk)*
- Moorea, French Polynesia, PACIFIC 2019 (01.-06.09.2019)  
**Lindner, M.:**  
*Conformal extensions of the Standard Model.*
- Moscow, Russia, 19th Lomonosov Conference on Elementary Particle Physics (22.-28.09.2019)  
**Akhmedov, E.:**  
*Relic neutrino detection through angular correlations in inverse beta-decay.*
- Moscow, Russia, International Symposium on Cosmic Ray and Astrophysics, IS CRA 2019 (25.-28.06.2019)  
**Dembinski, H.:**  
*The Muon Puzzle in high-energy showers.*
- Moscow, Russia, RAS Workshop "Future High Energy Gamma Ray Missions" (16.-20.09.2019)  
**Aharonian, F.:**  
*GeV Astronomy with ground-based detectors.*
- München, Germany, Conference IPP MPI for Plasma Physics (20.-22.11.2019)  
**Reville, B.:**  
*Non-thermal particles in selected astrophysical plasmas.*
- München, Germany, DPG Spring Meeting (Section HK) (17.-22.03.2019)  
**Pálffy-Buß, A.:**  
*Where nuclear physics meets quantum optics. (plenary talk)*
- München, Germany, DPG-Frühjahrstagung 2019 (17.-22.03.2019)  
**Cichon, D.:**  
*Studying the impact of radon daughter removal techniques on xenon purity.*
- München, Germany, Symposium "Nucleosynthesis for a Life" (08.02.2019)  
**Aharonian, F.:**  
*Nuclear gamma-rays from hot accretion flows.*
- New Dehli, Int. Conference on Atomic Molecular Optical and Nanophysics with Applications, CAMNP 2019 (16.-20.12.2019)  
**Sturm, S.:**  
*Probing strong field quantum electrodynamics with trapped highly charged ions.*
- New Delhi, Workshop on Physics with Trapped Charged Particles (WPTCP-2019) (21.12.2019)  
**Sturm, S.:**  
*Probing the standard model with high precision measurements on trapped ions.*
- Newport, RI, USA, GRC Atomic Physics 2019 (12.06.2019)  
**Sturm, S.:**  
*QED Tests in Strong Fields and Fundamental Constants from Precision Measurements on Highly Charged Ions.*
- Nice, France; "Semaine de la SF2A 2019" Meeting (14.-17.05.2019)  
**Giacinti, G.:**  
*Electron Acceleration in the Crab Nebula.*
- Nizhny Novgorod, Russia, VII International Conference "Frontiers of Nonlinear Physics" (FNP 2019) (28.06.-04.07.2019)  
**Evers, J.:**  
*X-ray quantum optics with Mössbauer nuclei.*  
**Keitel, C. H.:**  
*Ultra relativistic quantum dynamics and QED in extremely intense laser pulses. (plenary talk)*  
**Pálffy-Buß, A.:**  
*Nuclear and plasma physics at extreme light sources.*
- Noida, India, International conference on photonics, metamaterials and plasmonics (14.-16.02.2019)  
**Bhadoria, S.:**  
*Laser-driven shock acceleration of quasi-monoenergetic ions in the ultra-relativistic regime.*  
**Sinha, U.:**  
*Polarized light from the transportation of matter antimatter beam in a plasma.*
- Novosibirsk, Russian Federation, Int. Workshop on Beam Cooling (COOL'19) (23.-27.09.2019)  
**Wolf, A.:**  
*Electron Cooling in the Low-Energy Electrostatic Storage Ring CSR at Electron Energies down to 10 eV.*

- Odense, Denmark, MASS2019 (20.-24.05.2019)  
**Alanne, T.:**  
*A critical look at  $\beta$ -function singularities at large  $N$ .*
- Odessa, Ukraine, 6th Gamow International Conference "New Trends in Cosmology, Astrophysics and HEP after Gamow" (11-18.08.2019)  
**Aharonian, F.:**  
*Cosmic Ray Factories.*
- Orsay, France, LAL, Higgs Hunting 2019 (29.-31.07.2019)  
**Blasi, S.:**  
*Flavored-axion Higgs unification.*
- Oxford, UK, PyHEP 2019 workshop (16.-18.10.2019)  
**Dembinski, H.:**  
*Introduction to iminuit.*
- Padova, Italy, 1<sup>st</sup> SWGO International Collaboration Meeting (30.10.-01.11.2019)  
**Hinton, J.A.:**  
*The Southern Wide-Field Gamma-ray Observatory.*
- Palo Alto, California, USA, Extremely High-Intensity Laser Physics 2019 (03.-06.09.2019)  
**Di Piazza, A.:**  
*Theory of Strong-Field QED in Intense Laser Fields.*
- Paris, France, 26th International Symposium on Ion-Atom Collisions (ISIAC) (22.07.2019)  
**Novotny, O.:**  
*Rotational-state resolved dissociative recombination measurements at the Cryogenic Storage Ring (CSR).*
- Paris, France, LPNHE - French Physics Society day on rare events search (12.10.2019)  
**Kermaidic, Y.:**  
*Probing New Physics with neutrinoless double beta decay.*
- Pohang, Republic of Korea, Workshop: XFEL in Attosecond Science (11.07.2019)  
**Ott, C.:**  
*Resonant XUV nonlinear absorption with a free-electron laser.*
- Pohang, South Korea, APCTP workshop "Nuclear Many-Body Theories: Beyond the mean field approaches" (01.-10.07.2019)  
**Lim, Y.:**  
*Nuclear equation of state for hot dense matter.*
- Pohang, South Korea, APCTP Workshop on flavor symmetry and related topics (19.03.2019)  
**Trautner, A.:**  
*CP, T-Duality and Modular Symmetries. (plenary lecture)*
- Portorož, Slovenia, Precision era in High Energy Physics Workshop (16.-19.04.2019)  
**Brdar, V.:**  
*The Conformal Realization of the Neutrino Option and its Gravitational Wave Signature.*
- Prague, Czech Republic, MEDEX (27.-31.05.2019)  
**Eliseev, S.:**  
*Penning-Trap Mass Spectrometry and Neutrino Mass.*  
**Graf, L.:**  
*Particle Physics of Non-Standard Neutrinoless Double Beta Decay.*
- Prague, Czech Republic, SPIE Optics and Optoelectronics 2019 (01.-04.04.2019)  
**Di Piazza, A.:**  
*Improved local constant-field approximation for strong-field QED codes.*  
**Keitel, C. H.:**  
*Ultra relativistic quantum dynamics at the high-end of extreme field laser physics. (keynote presentation)*
- Prayagraj (Allahabad), India, Neutrino and Dark Matter Activity Week, Harish-Chandra Institute (01.02.2019)  
**Brdar, V.:**  
*Low scale neutrino mass generation and phenomenological implications.*
- Primosten, Croatia, Bridging perturbative and non-perturbative physics (07.-09.10.2019)  
**Blasi, S.:**  
*Critical point method and beta-function at large  $N$ .*

- Riezlern, Austria, 40<sup>th</sup> Extreme Atomic Systems (EAS) Meeting (18.-21.02.2019)  
**Lentrodt, D. S.:**  
*X-ray quantum optics with Mössbauer nuclei.*  
**Oreshkina, N. S.:**  
*The determination of nuclear parameters and nuclear polarization correction in heavy muonic systems.*
- Rostock, Germany, DPG Spring Meeting (Section AMOP) (10.-15.03.2019)  
**Debierre, V.:**  
*Towards testing physics beyond the Standard Model with the bound-electron g factor.*  
**Evers, J.:**  
*Introduction to x-ray quantum optics.*  
**Pálffy-Buß, A.:**  
*X-rays go quantum.*
- Salamanca, Spain, 22nd International Conference on Radionuclide Metrology and its Applications (ICRM 2019) (27.-31.05.2019)  
**Buck, C.:**  
*Low Energy Ge Spectrometry with the CONUS reactor neutrino experiment.*
- San Juan, PR, USA, COFI workshop 2018 (21.-25.05.2019)  
**Platscher, M.:**  
*Reconciling lepton flavor violation and the muon anomalous magnetic moment.*
- San Sebastian, Spain, CECAM Workshop Ultrafast Physics from molecules to nanostructures (07.-10.10.2019)  
**Pfeifer, T.:**  
*Quantum dynamics and control around the 1-fs time scale: Driving excited states in atoms and molecules with intense light from the NIR to the XUV.*
- Santa Barbara, USA, KITP Meeting (19.08.-27.09.2019)  
**Reville, B.:**  
*Cosmic ray Confinement.*
- Santa Barbara, USA, KITP Meeting, (12.08.-18.10.2019)  
**Kirk, J.G.:**  
*Particle acceleration in Poynting-flux dominated outflows.*
- Santander, Spain, IFCA: Santander 2019: Atomic Databases Meeting (23.-24.01.2019)  
**Crespo López-Urrutia, J. R.:**  
*Reliable atomic data for fusion research and astrophysics: Benchmarking calculations for highly charged ions.*
- Schladming, Austria, Excited QCD 2019 (30.1.-3.2.2019)  
**Schmelling, M.:**  
*Heavy Ion and Fixed Target Results at LHCb.*
- Seoul, South Korea, International Workshop on New Physics at the Low Energy Scales (NEPLES-2019) (23.-27.09.2018)  
**Akhmedov, E.:**  
*Relic neutrino detection through angular correlations in inverse beta-decay.*  
**Xu, X.:**  
*The MSW potentials induced by ultralight mediators.*
- Shanghai, China, International Workshop on Laboratory Astrophysics (30.10.-01.11.2019)  
**Kumar, N.:**  
*Polarized light from the transporation of matter-antimatter beam in a plasma.*
- Sinaia, Romania, ELI-NP Summer School 2019 (09.-13.09.2019)  
**Di Piazza, A.:**  
*Strong-field QED in intense laser fields.*  
*Vacuum-polarization effects in intense laser beams.*
- Snowbird, UT, USA, Physics of Quantum Electronics, PQE-2019 (06.-11.01.2019)  
**Pfeifer, T.:**  
*XUV nonlinear optics and spectroscopy near resonances.*  
**Evers, J.:**  
*Coherent x-ray-optical control of Mössbauer nuclei with zeptosecond timing stability.*
- St. Louis, USA, NTN workshop on NSI (05.2019)  
**Xu, X.:**  
*New physics in coherent neutrino scattering.*

- Steinbach (Taunus), Germany, New trends in atomic physics", Tagungs- und Bildungszentrum Steinbach (10.05.2019)  
**Blaum, K.:**  
*Precision atomic physics measurements in Penning traps.*  
**Pfeifer, T.:**  
*From sub-femtosecond dynamics of atoms to super-nanosecond precision metrology of nuclei and ions.*
- Sudbury, Canada, SNEWS 2.0 (06.2019)  
**Xu, X.:**  
*Neutrino astronomy with supernova neutrinos.*
- Szeged, Hungary, 7th International Conference on Attosecond Science and Technology (01.-05.07.2019)  
**Ott, C.:**  
*XUV Excited-State Dynamics of a Two-Electron System in Strong Fields.*  
**Birk, P.:**  
*The Strong-Field Response of an Ionization Threshold.*  
**Ding, T.:**  
*Transient Absorption Ion Spectroscopy with XUV-FEL Pulses.*
- Taipei, Taiwan, XXXIX International Symposium on Physics in Collision (PIC 2019) (16.-20.09.2019)  
**Buck, C.:**  
*Very short baseline reactor neutrino experiments.*
- Tianjin, China, 8th International Workshop on Electrostatic Storage Devices (26.-30.08.2019)  
**Wolf, A.:**  
*Molecular studies in the Heidelberg CSR.*
- Tihany, Hungary, International Conference on Precision Physics and Fundamental Physical Constants (FFK-2019) (09.-14.06.2019)  
**Harman, Z.:**  
*Theory of the g factor of few-electron ions.*
- Tokai, Japan, Fundamental theories for negative muon experiments at J-PARC, and its application to elemental analysis (18.04.2019)  
**Michel, N.:**  
*Electric quadrupole interaction in high-Z muonic atoms.*  
**Oreshkina, N. S.:**  
*FNS, QED and screening effects in heavy muonic atoms.*
- Tokyo, Japan, Inauguration Symposium of the MPG-RIKEN-PTB Center for Time, Constants and Fundamental Symmetries, RIKEN (08.04.2019)  
**Blaum, K.:**  
*Physics with Penning Traps towards the Precision Limit - Determination of Fundamental Constants.*
- Tokyo, Japan, Prospects of Neutrino Physics (08.-12.04.2019)  
**Rodejohann, W.:**  
*Neutrinoless Double Beta Decay: Particle Physics Aspects.*
- Torino, Italy, XXVII International Workshop on Deep Inelastic Scattering and Related Subjects, DIS 2019 Workshop (08.-12.04.2019)  
**Dembinski, H.:**  
*Heavy-flavour hadron production at LHCb.*
- Toronto, Canada, 29th International Symposium on Lepton Photon Interactions at High Energies (LP2019) (05.-10.08.2019)  
**Bonhomme, A.:**  
*Latest results of the STEREO sterile neutrino search at the ILL Grenoble.*
- Toyama, Japan, XVIth International Conference on Topics in Astroparticle and Underground Physics, TAUP2019 (09.-13.09.2019)  
**Hinton, J.A.:**  
*Multimessenger astronomy with very high energy gamma ray observation.*  
**Lindner, M.:**  
*Status and new results of the CONUS experiment.*
- Trento, Italy, ECT\* Workshop "Precise beta decay calculations for searches for new physics" (10.04.2019)  
**Schwenk, A.:**  
*Chiral effective field theory for nuclei and dark matter direct detection.*
- Trento, Italy, Progress and Challenges in Neutrinoless Double Beta Decay (15.-19.07.2019)  
**Graf, L.:**  
*Probing BSM Physics with Non-Standard  $0\nu\beta\beta$ .*



- Trento, Italy, SN neutrinos at the crossroads: astrophysics, oscillations and detection (13.-17.05.2019)  
**Smirnov, A. Y.:**  
*Effective theory of collective neutrino oscillations.*  
**Doering, C.:**  
*Stability of three neutrino flavor conversion in supernovae.*
- Trieste, Italy, FERMI Science Colloquium, ELETTRA (12.09.2019)  
**Pfeifer, T.:**  
*Quantum dynamics and control on the 1-fs time scale using several optical and XUV fields tuned in intensity and time.*
- Tucson, USA, pSCT Inauguration Workshop (17.-18.01.2019)  
**Hofmann, W.:**  
*The Cherenkov Telescope Array.*
- Ulsan, South Korea, Mini-workshop on Laboratory astrophysics and atomic physics with traps and X-rays (12.04.2019)  
**Crespo López-Urrutia, J. R.:**  
*Hard-core atomic physics: highly charged ions.*  
*Laboratory astrophysics with electron beam ion traps.*
- Vancouver, Canada, TRIUMF, Progress in ab initio techniques in nuclear physics (26.02.2019)  
**Schwenk, A.:**  
*Chiral interactions for nuclear matter and medium-mass nuclei.*
- Venice, Italy, XVIII Inter. Workshop on Neutrino Telescopes (18.-22.03.2019)  
**Aharonian, F.:**  
*Gamma Ray Astrophysics.*
- Ventura, California, USA, Gordon Research Conference on Gaseous Ions: Structures, Energetics and Reactions (17.-22.02.2019)  
**Wolf, A.:**  
*Rotational Cooling and Electron Collisions of Molecular Ions at the Heidelberg Cryogenic Storage Ring CSR.*
- Villigen, Switzerland, EQLIPS Workshop 2019 at PSI (25.10.2019)  
**Sturm, S.:**  
*Towards laser-cooled highly charged ions for the ALPHATRAP g-factor experiment.*
- Villigen, Switzerland, PSI2019 (20.10.2019)  
**Sturm, S.:**  
*QED Tests in Strong Fields and Fundamental Constants from Precision Measurements on Highly Charged Ions.*
- Warsaw, Poland, Scalars 2019 conference (11.-14.09.2019)  
**Lindner, M.:**  
*Conformal extensions of the Standard Model.*  
**Trautner, A.:**  
*Systematic construction of basis invariants for the most general two Higgs doublet model.*
- Xi'an, China, 11<sup>th</sup> International Conference on Information Optics and Photonics (CIOP 2019) (07.-10.08.2019)  
**Li, J.-X.:**  
*Determination of the carrier-envelope phase of PW laser pulses.*
- Yerevan, Armenia, Int. Workshop: VHE phenomena Around Supermassive Black Holes (08.-12.04.2019)  
**Celli, S.:**  
*Propagation and radiation of accelerated particles in clumpy supernova remnants.*  
**Romoli, C.:**  
*The complex spectral and temporal behaviour of Markarian 501.*

## At Other Institutes

Aharonian, F.:

***Gamma Rays – messengers of crucial information about sources of galactic and extragalactic cosmic rays.***

Hamburg, Germany, Joint Theory Colloquium of DESY & Hamburg University (16.01.2019)

***Cosmic Ray PeVatrons in the Milky Way.***

Pasadena, USA, Caltech Astronomy Colloquium (27.02.2019)

***Cosmic Ray PeVatrons: young stars versus dead star.***

New Haven, USA, Yale University, Wright Laboratory NPA Seminar (05.03.2019)

Boston, USA, Harvard University, Theoretical Astrophysics Seminar (08.03.2019)

***Probing Nature's Extreme Accelerators with Gamma Rays.***

New York, USA, Columbia University, Physics Department Seminar (08.03.2019)

***Towards solution of the origin of Galactic Cosmic Rays.***

Greenbelt, USA, NASA/GSFC, Astrophysics Science Division Colloquium (12.03.2019)

Alanne, T.:

***Beyond vanilla WIMPs and leptogenesis via extended scalar sector.***

Hamburg, Germany, DESY theory seminar (22.07.2019)

Arcadi, G:

***Light Bosons from Tritium Decay.***

Laboratori Nazionali di Frascati Laboratori Nazionali di Frascati, Italy (21.05.2019)

Blasi, S.:

***Softened Goldstone-symmetry Breaking.***

Florence, Italy, INFN – sezione di Firenze, (group seminar) (26.06.2019)

Geneva, Switzerland, CERN, BSM Forum (06.06.2019)

Chicago, Illinois, USA, Fermilab, Theoretical Physics Seminar (08.05.2019)

Ithaca, New York, USA, Cornell University, Particle Theory Seminar (17.04.2019)

***Beta-function at large N.***

Syracuse, New York, USA, Syracuse University (group seminar) (26.04.2019)

Blaum, K.:

***Physics with Penning traps towards the precision limit.***

Physics Colloquium, Université de Genève, Switzerland (25.03.2019)

MLL-Kolloquium, Fakultät für Physik, Ludwig-Maximilians-Universität München, Germany (25.04.2019)

Physikalisches Kolloquium (Jubiläumskolloquium für Lutz Schweikhard), Institut für Physik, Universität Greifswald, Germany (14.06.2019)

PTB-Kolloquium, PTB Braunschweig, Germany (23.10.2019)

SFB-Seminar, Institut für Physik, Universität Kassel, Germany (28.10.2019)

***High-Precision Atomic Mass Measurements.***

Lunch Seminar SFB 1225 ISOQUANT, Institut für Theoretische Physik, Universität Heidelberg, Germany, (11.11.2019)

***Present and future of precision atomic and nuclear physics experiments with cooled and stored ions.***

Gothenburg University, Department of Physics Research Retreat, Marstrands, Sweden (25.11.2019)

Brdar, V.:

***Low scale neutrino mass generation and phenomenological implications.***

Mainz, Germany, Theorie-Palaver, Johannes Gutenberg University (11.06.2019)

Crespo López-Urrutia, J. R.:

***Laboratory astrophysics with electron beam ion traps.***

Tokyo, Japan, ISAS Space Science Colloquium & Space Science Seminar

***HCI clocks.***

***Hard-core atomic physics: highly charged ions.***

Tokyo, Japan, RIKEN, (11.04.2019)

***At the core of atomic matter.***

Bonn, Germany, Physics Colloquium Bonn University (11.05.2019)

***Optical clocks and frequency metrology using highly charged ions.***

Vancouver, Canada, University of British Columbia (05.09.2019)

***Dynamics of (mixed) Coulomb crystals.***

Florence, Italy, CC4C mid-term meeting EMPIR network

***Precision laboratory astrophysics in the EUV and soft X-ray region with synchrotron radiation and free-electron lasers.***

Trieste, Italy, Elettra Sincrotrone Trieste (25.11.2019)

***Orbital crossings and optical clocks with highly charged ions.***

Amsterdam, The Netherlands, Vrije Universiteit Amsterdam (19.12.2019)

Debierre, V.:

***The Quantum Electrodynamics of Simple Ions.***

Paris, France, Centre National de la Recherche Scientifique (04.04.2019)

- Dembinski, H.:**  
***From the Muon Puzzle to the LHC.***  
 Ghent, Belgium, University Colloquium (26.02.2019)  
 Zürich, Switzerland, University Colloquium (11.03.2019)  
 Dortmund, Germany, TU Colloquium (03.06.2019)
- Di Piazza, A.:**  
***Radiation reaction in classical and quantum electrodynamics.***  
 Milan, Italy, Department of Mathematics, University of Milan, Physics Colloquium (07.11.2019)
- Dorn, A.:**  
***Electron Impact Ionization of Atoms, Molecules and Clusters.***  
 Madrid, Spain, Instituto de Física Fundamental (12.12.2019)
- Evers, J.:**  
***X-ray quantum optics with Mössbauer nuclei.***  
 Erlangen, Germany, IMPRS Physics of Light, IMPRS Monthly Meeting (24.04.2019)
- Giacinti, G.:**  
***Particle Acceleration at Pulsar-Wind Termination Shocks.***  
 IPAG Laboratory; Grenoble, France (25.06.2019)  
***Acceleration of X-ray Emitting Electrons in the Crab Nebula.***  
 Columbia University; New York City, USA (01.08.2019)
- Goertz, F.:**  
***Softened Symmetry Breaking in Composite Higgs Models.***  
 University Würzburg, Germany (07.11.2019)  
***Softened Goldstone-Symmetry Breaking.***  
 Lausanne, Switzerland, EPFL, HET Seminar (04.07.2019)
- Graf, L.:**  
***Lepton Number Violation in the Nucleus and the Universe.***  
 Yale, Nuclear Particle Astrophysics seminar (30.10.2019)
- Harth, A.:**  
***Attosecond time resolved Photoionization: a closer look into the electron ionization continuum.***  
 Atomphysik Seminar GSI, Darmstadt, Deutschland (27.11.2019)  
***Attosecond timing with spectral resolution: what comes next?***  
 IRTG Seminar, Freiburg, Deutschland (18.06.2019)  
 Ultrafast Science Seminar, Bielefeld, Deutschland (27.05.2019)
- Hasterok, C.:**  
***The XENON1T Experiment: Latest Results on Dark Matter Searches and First Observation of Double Electron Capture of Xe-124.***  
 Universität Heidelberg, Germany, Teilchenkolloquium (21.05.2019)
- Hinton, J. A.:**  
***The Future of Very High Energy  $\gamma$ -ray Astronomy.***  
 Leicester, University of Leicester, physics and astronomy seminar (20.03.2019)
- Hofmann, W.:**  
***The galaxy viewed in very high energy gamma rays.***  
 Bonn, Germany, Physikalisches Kolloquium (17.05.2019)
- Jardin-Blicq, A.:**  
***A HAWC view of the multi-TeV gamma-ray sky.***  
 Zeuthen, Germany, DESY Astrophysikseminar (18.10.2019)
- Kermaidic, Y.:**  
***Probing New Physics with neutrinoless double beta decay.***  
 Paris, France, LPNHE - French Physics Society day on rare events search (12.10.2019)
- Kirk, J.G.:**  
***Gamma-ray flares from pulsar wind nebulae.***  
 Columbia University colloquium, New York, USA (03.09.2019)
- Lentrodt, D. S.:**  
***Ab initio few-mode theories for quantum potential scattering problems.***  
 Hamburg, Germany, Max Planck Institute for the Structure and Dynamics of Matter, Center for Free-Electron Laser Science, MPST Theory Seminar (20.05.2019)  
 Freiburg im Breisgau, Germany, Albert-Ludwigs-Universität Freiburg, Quantum Optics and Statistics Colloquium (13.02.2019)  
***Ab initio few-mode theory for open quantum systems.***  
 Warsaw, Poland, Faculty of Physics, University of Warsaw, Condensed Matter Physics Seminar (18.10.2019)

**Lindner, M.:**

***Neutrinos and Dark Matter.***

Bramsche, Germany, GRK 2149 Retreat of Münster University (24.09.2019)

***Die Suche nach Dunkler Materie.***

Palais Hirsch, Schwetzingen, Zweiter Schwetzingen Astronomietag (23.02.2019)

**Maneschg, W.:**

***The dawn of coherent elastic neutrino nucleus scattering and its search with CONUS.***

Heidelberg University, Germany, Colliding Pizza Seminar (17.07.2019)

**Marrodán Undagoitia, T.:**

***Auf der Jagd nach Dunkler Materie.***

Darmstadt, Germany, Volkssternwarte, öffentlicher Vortrag (08.2019)

**Moshhammer, R.:**

***Atomic physics experiments with intense lasers.***

Darmstadt, Germany, GSI (30.10.2019)

**Pálffy-Buß, A.:**

***Nuclear quantum optics with x-rays.***

Giessen, Germany, Justus-Liebig-Universität Gießen, Röntgen Lecture (28.11.2019)

***The energy of the <sup>229</sup>Th nuclear clock transition.***

Darmstadt, Germany, GSI Helmholtzzentrum für Schwerionenforschung, EMMI Featured Talk/GSI-FAIR Colloquium (19.11.2019)

***Depletion of nuclear isomers via nuclear excitation by electron capture.***

York, United Kingdom, Institute of Physics, University of York, Physics Seminar (04.06.2019)

***Quantum dynamics of atomic nuclei.***

Mainz, Germany, Institute of Physics, Johannes-Gutenberg-Universität Mainz, PRISMA Colloquium (29.05.2019)

***Nuclear excitation by electron capture in plasma and ion beam scenarios.***

Lausanne, Switzerland, École Polytechnique Fédérale de Lausanne, Physics Seminar (20.05.2019)

**Pfeifer, T.:**

***Dynamics of (transiently) bound states in strong laser fields and what we can learn from it.***

Lund, Sweden, Seminar, Lund University (24.01.2019)

***Die Grundlagen der Bewegung im Atom: Intensive Laser fragen, Elektronen antworten, wir lernen.***

Nürnberg, Germany, Mathematisch-Physikalisches Kolloquium TU Nürnberg (07.05.2019)

***Das angeregte Gespräch zweier Elektronen: wie wir sie belauschen und ganz kurz mal Fragen zur Physik stellen.***

Berlin, Germany, Physikalische Gesellschaft zu Berlin (PGzB). Kolloquium (04.07.2019)

***Listening to the ultrafast chat of excited electrons...and asking them some quick Physics questions.***

Darmstadt, Germany, GSI Colloquium (22.10.2019)

**Platscher, M.:**

***Phenomenological implications of the Vainshtein screening mechanism.***

Heidelberg, Germany, ITP Seminar (07.05.2019)

**Reville, B.:**

***Cosmic-ray acceleration – limits and laboratories.***

Erlangen, Germany, Seminar (19.12.2019)

**Rodejohann, W.:**

***New Physics in Neutrino Mass Experiments.***

Karlsruhe, Germany, Physikalisches Kolloquium (13.12.2019)

**Shaisultanov, R.:**

***Spin effects in the external electromagnetic field.***

Dolní Břežany, Czech Republic, ELI Beamlines, Institute of Physics of the Academy of Sciences of the Czech Republic, Physics Seminar (07.06.2019)

**Sikora, B.:**

***Aktuelle Forschungsbezüge zur Sommerfeldschen Feinstrukturkonstante.***

Leipzig, Germany, Arnold-Sommerfeld-Gesellschaft e. V. (ASG), Sommerfeld-Tag (25.04.2019)

**Smirnov, A. Y.:**

***Strange effects in neutrino oscillations.***

München, Germany, Colloquium at ASC, the Ludwig-Maximilian-Universität (12.06.2019)

**Sturm, S.:**

***Precision Penning traps – testing QED and determining fundamental constants.***

QUANTUM Seminar, University of Mainz (17.01.2019)

Seminar Ubachs, VU Amsterdam, The Netherlands (09.05.2019)

**Surajbali, P.:**

***Fermi-bubbles - an overview and more.***

Heidelberg, Germany, University, ITA “Blackboard Colloquium” (28.01.2019)

***Observing large scale structures in the gamma-ray sky***

Surrey, UK, MSSL Astronomy Seminar (17.10.2019)

**Tamburini, M.:**

***Polarized Laser-WakeField-Accelerated Kiloampere Electron Beams.***

***Strong-field QED beyond the local-constant-field approximation in laser-plasma interaction.***

Pisa, Italy, Consiglio Nazionale delle Ricerche - Istituto Nazionale di Ottica (CNR-INO), Physics Seminar (10.12.2019)

***Particle and plasma dynamics in extreme laser fields.***

Jena, Germany, Helmholtz Institute Jena (20.05.2019)

**Tenorth, V.T.:**

***Extended Dark Matter EFT(s).***

Orsay, France, Univ. Paris-Sud Laboratoire de Physique Theorique d’Orsay (13.06.2019)

**Trautner, A.:**

***A systematic method to construct basis invariants in the 2HDM and beyond.***

München, TUM, Particle theory seminar (01.05.2019)

***Systematic construction of basis invariants in the 2HDM and beyond.***

Santa Cruz, California, USA, UC Santa Cruz, Particle theory seminar (02.04.2019)

**Tuffs, R.J.:**

***The Growth of Spiral Galaxies over Cosmic Time.***

Heidelberg, Germany, Heidelberg Joint Astronomical Colloquium (13.11.2019)

**Vogl, S.:**

***Dark matter phenomenology meets NREFT: Non-perturbative effects in dark matter production.***

Aachen, Germany, RWTH Aachen, Seminar (15.05.2019)

***New effects in dark matter production.***

Brussels, Belgium, Université libre de Bruxelles, Theoretical Physics Seminar (03.05.2019)

Heidelberg, Germany, Ruprecht-Karls-Universität, Teilchentee (27.06.2019)

**Wistisen, T. N.:**

***Higher order processes in strong electromagnetic fields.***

Hamburg, Germany, LUXE meeting (01.10.2019)

**Xu, X.:**

***The Wolfenstein potentials induced by ultralight mediators.***

Beijing, China, Tsinghua University (09.2019)

***Loop-induced neutrino interactions.***

UC Irvine, California USA (06.2019)

UC Riverside, California USA (06.2019)

**Zanin, R.:**

***Binary systems in gamma rays: shining light on accretion particle outflows, and their possible link.***

Madrid, Spain, Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas CIEMAT (25.05.2019)

# Teaching Activities

## Summer Semester 2017

**Aharonian, F.:**

***Gamma Ray Astrophysics.***

L'Aquila, Italy, International School of Space Science, ISSS (12.-16.06.2017)

**Akhmedov, E.:**

***Neutrino Physics.***

MITP (Mainz University) Summer School

**Blaum K., Wolf A.:**

***Oberseminar: Physik mit gespeicherten und gekühlten Ionen.***

Universität Heidelberg

**Blaum K.:**

***Übungen zur Experimentalphysik IV (Kern- und Teilchenphysik).***

Universität Heidelberg

**Di Piazza, A.:**

***Lecture: Quantum Electrodynamics.***

Heidelberg University

**Donath, A., King, J.:**

***Hands-on on Astropy.***

Annecy, France, First ASTERICS-OBELICS International School (06.-09.06.2017)

**Evers, J.:**

***Tutorial for lecture: Quantenmechanik.***

Heidelberg University

**Harman, Z.:**

***Regular curriculum lecture (including tutorial): Advanced Quantum Theory.***

Heidelberg University

**Keitel, C. H., Oreshkina, N. S.:**

***Advanced Seminar: Theoretical Quantum Dynamics.***

Heidelberg University

**Kreckel, H.:**

***Übungen zur Experimentalphysik IV (Kern- und Teilchenphysik).***

Universität Heidelberg

**Lindner, M., Rodejohann, W., Buck, C., Simgen, H.:**

***Aktuelle Themen der Astroteilchenphysik: Theorie und Experiment.***

Universität Heidelberg

**Lindner, M., Rodejohann, W.:**

***Teilchen- und Astroteilchen-Theorie.***

Universität Heidelberg/MPIK

**Marrodan Undagoitia, T.:**

***Detection Techniques for Neutrinos and Dark Matter.***

Murten, Switzerland, Invisibles school

**Moshhammer, R., Pfeifer, T.:**

***Oberseminar: "Atomic Physics: Structure and Dynamics".***

Universität Heidelberg, MPIK

**Oreshkina, N. S.:**

***Tutorial coordinator for lecture: Advanced Quantum Theory.***

Heidelberg University

**Ott, C.:**

***Special Lecture "Ultrafast Strong-Field Physics".***

Universität Heidelberg

***Ring Lecture AMO Physics in Heidelberg. „Ultrafast Physics in Strong Fields – Understanding and Controlling Multi-Electron Dynamics“.***

Universität Heidelberg (29.04.2017)

**Smirnov, A. Y.:**

*Solar neutrinos: Theory and Experiment.*

*Matter effects.*

Lectures at the VII Pontecorvo Neutrino Physics School, Prague, Czech Republic

*Bethe forum: Lecture series on „Neutrinos“.*

Bonn University, Germany, Bethe Center for Theoretical Physics

**Wolf, A.:**

*Experimental Methods on Atomic, Molecular and Optical Physics.*

Universität Heidelberg

## Winter Semester 2017/2018

Aharonian, F.:

*Gamma Ray Astrophysics.*

L'Aquila, Italy, Gran Sasso Science Institute GSSI

Akhmedov, E.:

*Neutrino Physics.*

Universität Heidelberg, 40th Heidelberg Physics Graduate Days

Blaum K., Wolf A.:

*Oberseminar: Physik mit gespeicherten und gekühlten Ionen.*

Universität Heidelberg

Blaum, K.:

*Stored Charged Particles.*

Universität Heidelberg

Di Piazza, A.:

*Tutorial for lecture: Quantum Field Theory I.*

Heidelberg University

Dorn, A.:

*Tutor, Übungen zur Experimentalphysik III (PEP3).*

Universität Heidelberg

Evers, J.:

*Lecture: Theoretical Quantum Optics.*

Heidelberg University

Goertz, F.:

*Going Beyond the Standard Model of Particle Physics.*

Universität Heidelberg

Harman, Z.

*Tutorial for lecture: Advanced atomic, molecular and optical physics.*

Heidelberg University

Harth, A.:

*Tutorials to Lecture "Experimentalphysik III."*

Universität Heidelberg

*Research seminar "Journal Club".*

Universität Heidelberg

Keitel, C. H., Oreshkina, N. S.:

*Advanced Seminar: Theoretical Quantum Dynamics.*

Heidelberg University

Kreckel, H.:

*Molecular Astrophysics.*

Universität Innsbruck

Lindner, M., Arcadi, G.:

*Dark Matter.*

Universität Heidelberg

Lindner, M., Rodejohann, W.:

*Teilchen- und Astroteilchen-Theorie.*

Universität Heidelberg/MPIK

Lindner, M.:

*Looking for the invisible: Searches for Dark Matter.*

Universität Heidelberg

Marrodan Undagoitia, T. und Arcadi, G.:

*Dark matter.*

Universität Heidelberg

Mooser, A.:

*Precision Physics with Antimatter.*

39th Heidelberg Physics Graduate Days, Universität Heidelberg



**Moshhammer, R., Pfeifer, T.:**

*Oberseminar: "Atomic Physics: Structure and Dynamics".*

Universität Heidelberg, MPIK

**Moshhammer, R.:**

*Tutorial/Übungen zur Vorlesung: „Advances atomic, molecular, and optical physics“.*

Universität Heidelberg

**Ott, C.:**

*Tutorials to Lecture "Experimentalphysik III.*

Universität Heidelberg

*IMPRS-QD Annual Event. „Dynamics of correlated electrons in weak and strong fields“.*

Universität Heidelberg (17.11.2017)

**Pfeifer, T.:**

*Master Student Seminar (graduate-level): Atomic and Molecular Physics with Lasers: Pushing the Precision and Power of Quantum Dynamics.*

Universität Heidelberg

**Platscher, M. (with B. M. Schäfer):**

*Elektrodynamik.*

Universität Heidelberg

**Rink, T.:**

*Theoretical Physics I (Tutorial).*

Ruprecht-Karls-Universität Heidelberg

**Schmelling, M.:**

*Statistische Methoden der Datenanalyse II.*

TU Dortmund (Blockkurs 3/2018)

**Schoppmann, S.:**

*Übungsgruppe zur Experimentalphysik 1.*

Universität Heidelberg

**Skoromnik, O. D.:**

*Tutorial for lecture: Theoretical statistical physics.*

Heidelberg University

**Smirnov, A. Y.:**

*Introduction to Particle Physics.*

International Centre for Theoretical Physics, Trieste, Italy

**Wolf, A.:**

*Tutorial on Advanced Atomic, Molecular and Optical Physics.*

Universität Heidelberg

## Summer Semester 2018

Arcadi, G.:

*Advanced Dark Matter.*  
Universität Heidelberg

Bernlöhr, K.:

*High Energy Astrophysics (Part 1).*  
Universität Heidelberg

Blaum K., Wolf A.:

*Oberseminar: Physik mit gespeicherten und gekühlten Ionen.*  
Universität Heidelberg

Blaum K.:

*Übungen zur Experimentalphysik IV (Kern- und Teilchenphysik).*  
Universität Heidelberg

Crespo López-Urrutia, J. R.:

*Ring Lecture AMO Physics in Heidelberg. „ Highly charged ions for probing the time variation of the fine-structure constant“.*  
Universität Heidelberg (29.6.2018)

Deil, C:

*Efficient code design: debugging/profiling.*  
Annecy, France, Second ASTERICS-OBELICS International School (04.-08.06.2018)

Di Piazza, A.:

*Tutorial coordinator for lecture: Advanced Quantum Field Theory II.*  
Heidelberg University

Donath, A.:

*Python libraries: Astropy.*  
Annecy, France, Second ASTERICS-OBELICS International School (04.-08.06.2018)

Evers, J.:

*Tutorial for lecture: Experimentalphysik IV.*  
Heidelberg University

Harman, Z.:

*Tutorial for lecture: Experimentalphysik IV.*  
Heidelberg University

Harth, A.:

*Tutorials to Lecture “Experimentalphysik II.”*  
Universität Heidelberg  
*Research seminar “Journal Club“.*  
Universität Heidelberg

Hinton, J.A.:

*DIAS Summer School in High-Energy Astrophysics 2018*  
*Very High Energy Gamma Ray Astronomy.*  
Dublin Institute for Advanced Science, Ireland (19.-29.06.2018)

Keitel, C. H., Oreshkina, N. S.:

*Advanced Seminar: Theoretical Quantum Dynamics.*  
Heidelberg University

Kreckel, H.:

*Übungen zur Experimentalphysik IV (Kern- und Teilchenphysik).*  
Universität Heidelberg

Lindner, M., Goertz, F., Rodejohann, W.:

*Current topics beyond the Standard Model physics.*  
Universität Heidelberg

Lindner, M., Rodejohann, W.:

*Teilchen- und Astroteilchen-Theorie.*  
Universität Heidelberg/MPIK

Moshammer, R., Pfeifer, T.:

*Oberseminar: “Atomic Physics: Structure and Dynamics“.*  
Universität Heidelberg, MPIK

**Ott, C.:**

*PALM International School 2018 – Attosecond Science: from ultrafast sources to applications.*

„Correlated Systems in Weak and Strong Fields“.

Benoit Frachon Conference Center, Gif-sur-Yvette, France (01.06.2018)

**Pfeifer, T. (with Jochim, S.):**

**Bachelor-Student Seminar (undergraduate level): Quantenmechanische Verschränkung zum Anfassen (Quantum-mechanical entanglement made approachable, to touch and play).**

Universität Heidelberg

**Rink, T:**

*Theoretical Physics II (Tutorial).*

Ruprecht-Karls-Universität Heidelberg

**Skoromnik, O. D.:**

*Tutorial for lecture: Quantum Field Theory II.*

Heidelberg University

**Wolf, A.:**

*Übungen zur Experimentalphysik II (PEP2).*

Universität Heidelberg

## Winter Semester 2018/2019

Aharonian, F.:

*Gamma Ray Astrophysics.*

L'Aquila, Italy, Gran Sasso Science Institute GSSI

Bernlöhr, K.:

*High Energy Astrophysics (Part 2).*

Universität Heidelberg

Blaum K., Wolf A.:

*Oberseminar: Physik mit gespeicherten und gekühlten Ionen.*

Universität Heidelberg

Blaum K.:

*Moderne Methoden der Massenspektrometrie.*

Universität Heidelberg

Crespo López-Urrutia, J. R., Pfeifer, T.:

*Bachelor-student seminar: Schlüsselexperimente der modernen Quantenphysik (Key experiments of modern quantum physics).*

Universität Heidelberg

Di Piazza, A.:

*Tutorial for lecture: Quantum Field Theory I.*

Heidelberg University

Dorn, A.:

*Tutor, Exercises Advanced Atomic, Molecular and Optical Physics (AAMOP).*

Universität Heidelberg

Evers, J.:

*Lecture: Theoretical Quantum Optics.*

Heidelberg University

Goertz, F.:

*Applications of Effective Lagrangians in Quantum Field Theory.*

Universität Heidelberg

Harman, Z.

*Tutorial for lecture: Advanced atomic, molecular and optical physics.*

Heidelberg University

Harth, A.:

*Tutorials to Lecture "Advanced Atomic Molecular and Optical Physics".*

Universität Heidelberg

*Research seminar "Journal Club".*

Universität Heidelberg

Keitel, C. H., Oreshkina, N. S.:

*Advanced Seminar: Theoretical Quantum Dynamics.*

Heidelberg University

Köhler-Langes, F.:

*High-precision Tests of Quantum Electrodynamics.*

12th HGSFP Winterschool 2019, Obergurgl, Austria, University Center Obergurgl (16.-20.01.2019)

Lindner, M., Rodejohann, W.:

*Teilchen- und Astroteilchen-Theorie.*

Universität Heidelberg/MPIK

*The Standard Model of Particle Physics II: Theory.*

Universität Heidelberg

Lindner, M.:

*Looking for the invisible: Searches for Dark Matter.*

Universität Heidelberg

Marrodán Undagoitia, T., Arcadi, G.:

*Dark Matter.*

Universität Heidelberg

Marrodan Undagoitia, T. (with Gastaldo, L.):

*Experimental methods in astroparticle physics.*

Universität Heidelberg

**Moshhammer, R., Pfeifer, T.:**

*Oberseminar: "Atomic Physics: Structure and Dynamics".*

Universität Heidelberg, MPIK

**Oreshkina, N. S. (with Quint, W.):**

*Lecture: Quantum Electrodynamics: Theoretical Foundations and Modern Experiments.*

Heidelberg University

**Ott, C.:**

*Obertutor to Lecture "Advanced Atomic Molecular and Optical Physics".*

Universität Heidelberg

**Pálffy-Buß, A.:**

*Lecture: Quantum Dynamics with X-rays.*

at the 41<sup>st</sup> Heidelberg Physics Graduate Days

Heidelberg University

**Pfeifer, T., Crespo López-Urrutia, J. R.:**

*Bachelor-Student seminar (undergraduate level): Schlüsselexperimente der modernen Quantenphysik (Key experiments of modern quantum physics).*

**Pfeifer, T.:**

*Übungen zur Experimentalphysik III: Quantenmechanik und Atomphysik (Recitation/Tutorials on Experimental Physics III: Quantum mechanics and atomic physics).*

Universität Heidelberg

**Schmelling, M.:**

*Statistische Methoden der Datenanalyse II.*

TU Dortmund (Blockkurs 2/2019)

**Schoppmann, S.:**

*Übungsgruppe zur Experimentalphysik 1.*

Universität Heidelberg

**Smirnov, A. Y.:**

*Introduction to Particle Physics.*

International Centre for Theoretical Physics, Trieste, Italy

**Sturm, S.:**

*Precision Measurements on Highly Charged Ions.*

12<sup>th</sup> HGSFP Winterschool 2019, Obergurgl, Austria, University Center Obergurgl (16.-20.01.2019)

**Wolf, A. (mit Weidemüller, M.):**

*Seminar „Quantum Technologies“.*

Universität Heidelberg

## Summer Semester 2019

Aharonian, F.:

*ISAPP Summer School "The dark side of the Universe"*  
*High Energy Universe (theory).*  
Heidelberg, MPIK (03.06.2019)

Akhmedov, E.:

*Coherent neutrino scattering.*  
6th Plenary Workshop of Karlsruhe School of Elementary Particle and Astroparticle Physics (KSETA)  
*Neutrino Physics - Theory.*  
MPIK, Heidelberg, ISAPP 2019

Arcadi, G.:

*Teoria di Relatività.*  
Università degli Studi di Roma 3

Blaum K., Wolf A.:

*Oberseminar: Physik mit gespeicherten und gekühlten Ionen.*  
Universität Heidelberg

Blaum, K.:

*Physics with Penning traps towards the precision limit-determination of fundamental constants.*  
lecture within the ring lecture "Modern Quantum Physics", Kirchhoff-Institute for Physics  
Heidelberg University (07.06.2019)

Crespo López-Urrutia, J. R., Pfeifer, T.:

*Bachelor-student seminar: Schlüsselexperimente der modernen Quantenphysik (Key experiments of modern quantum physics).*  
Universität Heidelberg

Di Piazza, A.:

*Regular curriculum lecture (including tutorial): Advanced Quantum Theory.*  
Heidelberg University

Evers, J.:

*Tutorial for lecture: Experimentalphysik IV.*  
Heidelberg University

Harman, Z.:

*Tutorial for lecture: Experimentalphysik IV.*  
Heidelberg University

Harth, A.:

*(Proxy)Tutor to Lecture "Schlüsselexperimente der Quantenphysik".*  
Universität Heidelberg  
*Talks in the Lecture "Ringvorlesung".*  
Universität Heidelberg  
*Research seminar "Journal Club".*  
Universität Heidelberg

Keitel, C. H., Oreshkina, N. S.:

*Advanced Seminar: Theoretical Quantum Dynamics.*  
Heidelberg University

Kirk, J.G.:

*Particle acceleration in Poynting-flux dominated outflows.*  
59th Cracow School of Theoretical Physics, Zakopane, Poland (2 lectures)

Kreckel, H.:

*Übungen zur Experimentalphysik IV (Kern- und Teilchenphysik).*  
Universität Heidelberg

Lindner, M., Goertz, F., Rodejohann, W.:

*Current topics beyond Standard Model physics.*  
Universität Heidelberg

Lindner, M., Rodejohann, W.:

*Teilchen- und Astroteilchen-Theorie.*  
Universität Heidelberg/MPIK, HD

**Moshhammer, R., Pfeifer, T.:**

***Oberseminar: "Atomic Physics: Structure and Dynamics".***

Universität Heidelberg, MPIK

**Oreshkina, N. S. (with Quint, W.):**

***Compulsory Master's seminar: Key Experiments in Atomic and Laser Physics.***

Heidelberg University

***Tutorial for lecture: Experimentalphysik IV.***

Heidelberg University

**Pfeifer, T., Crespo López-Urrutia, J. R.:**

***Bachelor-Student seminar (undergraduate level): Schlüsselexperimente der modernen Quantenphysik (Key experiments of modern quantum physics).***

Universität Heidelberg

**Rink, T:**

***Neutrino mass and leptogenesis.***

Universität Heidelberg

**Smirnov, A. Y.:**

***Theory of neutrino mass and mixing.***

***MSW effect and neutrino oscillations.***

Lectures at the VIII Pontecorvo Neutrino Physics School, Sinaia, Romania

## Winter Semester 2019/20

Aharonian, F.:

***Gamma Ray Astrophysics.***

L'Aquila, Italy, Gran Sasso Science Institute GSSI

Blaum K., George, S.:

***Stored Charged Particles.***

Universität Heidelberg

Blaum, K.:

***Präzisionstests des Standardmodells bei niedrigen Energien.***

Vorlesungsreihe im Rahmen der 51. Herbstschule für Hochenergiephysik, Benediktinerabtei Maria Laach (03.-13.09.2019)

Celli, S., Conte, F.:

***Particle and Astroparticle Physics Course.***

(for II year masters students, lectures within the course of Prof. A. Capone)

La Sapienza University of Rome, Italy

Crespo López-Urrutia, J. R., Pfeifer, T.:

***Bachelor-student seminar: Schlüsselexperimente der modernen Quantenphysik (Key experiments of modern quantum physics).***

Universität Heidelberg

Di Piazza, A.:

***Tutorial for lecture: Quantum Field Theory I.***

Heidelberg University

Evers, J., Wolf, A.:

***Seminar „Quantum Technologies“.***

Universität Heidelberg

Goertz, F. (with Hansmann-Menzemer, S.):

***Particle physics beyond the standard model & Colliding Pizza Seminar.***

Universität Heidelberg

Harman, Z. (with Quint, W.):

***Lecture: Quantum Electrodynamics: Theory and Modern Experiments.***

Heidelberg University

***Lecture: High-precision Tests of Quantum Electrodynamics.***

at the 43<sup>rd</sup> Heidelberg Physics Graduate Days

Heidelberg University

Harth, A.:

***Tutorials to Lecture “Advanced Atomic Molecular and Optical Physics“.***

Universität Heidelberg

***IMPRS (Retreat), Event talk “Attosecond time resolved Photoionization“.***

Neunkirchen, Germany (20.09.2019)

***HGSFP Winterschool 2020 to Lecture “Photoionization“, 2 lectures***

Obergurgl, Österreich

Hinton, J.A., Schoorlemmer, H.:

***Heidelberg Graduate Days***

***The multi-messenger hunt for cosmic particle accelerators.***

Universität Heidelberg (07.-11.10.2019)

Keitel, C. H., Tamburini, M.:

***Advanced Seminar: Theoretical Quantum Dynamics.***

Heidelberg University

Köhler-Langes, F.:

***High-precision Tests of Quantum Electrodynamics.***

43rd Heidelberg Physics Graduate Days of the Heidelberg Graduate School for Physics and the Department of Physics and Astronomy

Universität Heidelberg (07.-11.10.2019)

Kreckel, H.:

***Molecular Astrophysics***

Universität Heidelberg



**Lindner, M., Rodejohann, W.:**

***Teilchen- und Astroteilchen-Theorie.***

Universität Heidelberg/MPIK

***The Standard Model of Particle Physics II: Theory.***

Universität Heidelberg

**Lindner, M.:**

***The invisible Universe: Dark Matter and Neutrinos.***

Universität Heidelberg

**Moshhammer, R., Pfeifer, T.:**

***Oberseminar: "Atomic Physics: Structure and Dynamics".***

Universität Heidelberg, MPIK

**Moshhammer, R.:**

***Tutorial/Übungen zur Vorlesung: „Advances atomic, molecular, and optical physics“.***

Universität Heidelberg

***Ringvorlesung, Biophysikalische Chemie: „Molecules in the focus of ultrashort laser pulses“.***

Universität Heidelberg

**Oreshkina, N. S.:**

***Tutorial for lecture: Experimentalphysik III.***

Heidelberg University

**Ott, C.:**

***Obertutor to Lecture "Advanced Atomic Molecular and Optical Physics".***

Universität Heidelberg

***„Fundamentals and Applications of High-Order Harmonic Generation“.***

QUTIF Research School "Ultrafast dynamics in atoms, molecules, nanostructures and solids", Freiburg im Breisgau, Germany

(07.10.2019)

**Pfeifer, T., Crespo López-Urrutia, J. R.:**

***Bachelor-Student seminar (undergraduate level): Schlüsselexperimente der Quantenphysik (Key experiments of quantum physics).***

Universität Heidelberg

**Smirnov, A. Y.:**

***Physics of neutrino flavor transformations.***

3 lectures at KIAS, Seoul, Korea

***Introduction to Particle Physics.***

International Centre for Theoretical Physics, Trieste, Italy

## Jointly Organised Conferences and Workshops

Bad Honnef, Germany, 698. WE-Heraeus-Seminar on 'Massive Neutrinos' (08.-11.07.2019)

**Lindner, M.**

Barcelona, Spain, High Energy Phenomena in Relativistic Outflows, HEPRO-VII (09.-12.07.2019)

**Aharonian, F.**

Bologna, Italy, 1<sup>st</sup> CTA Science Symposium (06.-09.05.2019)

**Hinton, J.**

Budenheim, Schloss Waldthausen, Germany, NPA IX Conference (16.-20.09.2019)

**Blaum, K.**

Cargèse, France, School: Cosmic Explosions 2019 (27.05.-05.06.2019)

**Zanin, R.**

Dublin, Ireland, 2<sup>nd</sup> DIAS Summer School on High-Energy Astrophysics (19.-29.06.2018)

**Aharonian, F.**

Garching, Germany, Int. Symposium on New Directions in Plasma Astrophysics (20.-22.11.2019)

**Hinton, J.**

Garching, Germany, MPQ, Workshop on "Gravity, Information and Fundamental Systems", Garching, (04.-06.11.2019)

**Blaum, K., Lindner, M.**

Geneva, Switzerland, CERN, Workshop on statistical issues in experimental Neutrino physics, PHYSTAT-nu (23.-26.01.2019)

**Lindner, M.**

Gyeongju, South Korea, Seminar 9 of the 28<sup>th</sup> annual International Laser Physics Workshop (LPHYS'19) (08.-12.07.2019)

**Keitel, C. H., Di Piazza,**

Hamburg, Germany, 2019 Conference on Lasers and Electro-Optics/Europe – European Quantum Electronics Conference (CLEO®/Europe-EQEC 2019), Service on program committee (High-Field Laser and Attosecond Science) (23.-27.06.2017)

**Pfeifer, T.**

Hamburg, Germany, Workshop on New Scientific Capabilities at European XFEL (25.-27.03.2019)

**Pfeifer, T.**

Heidelberg, Germany, ASTERIX-OBELICS PyGamma19 – Python and open data for gamm-ray astronomy (18.-22.03.2019)

**Deil, C.**

Heidelberg, Germany, Energy Scale Calibration in Antineutrino Precision Experiments "ESCAPE 2018" (01.-02.06.2018)

**Schoppmann, S.**

Heidelberg, Germany, Hillas Symposium (10.-12.12.2018)

**Hinton, J.**

Heidelberg, Germany, ISAPP Summer School „ The Dark Side of the Universe“ (28.05.-04.06.2019)

**Akhmedov, E., Berneiser, A., Brdar, V., Buck, C., Graf, L., Helmboldt, A., Jaramillo, C., Lindner, M., Marrodan Undagoitia, T., Rodejohann, W., Saldana Salazar, U., Schoppmann, S., Schwarz, B., Simgen, H., Smirnov, A.Y., Van der Woude, S.**

Heidelberg, Germany, MPIK, German-Israeli Meeting "Next Steps at CSR" (10.-11.12.2018)

**Blaum, K., Kreckel, H., Wolf, A.**

Heidelberg, Germany, MPIK, Mini-Workshop "Resonant Atom Majorana Mixing" (12.06.2018)

**Blaum, K.**

Heidelberg, Germany, MPIK, WE-Heraeus Summer School on: Nuclear Physics in Astrophysics (10.-14.09.2019)

**Blaum, K.**

Heidelberg, Germany, Ruprecht-Karls-Universität, Dark Matter at the Dawn of Discovery (04.2018)

**Marrodan Undagoitia, T.**

Heidelberg, Germany, SGSO Workshop (08.-09.10.2018)

**Hinton, J.**

Heidelberg, Germany, The International Conference on Quantum Systems in Extreme Conditions (QSEC2019) (23.-27.09.2019)

**Harman, Z.**

Heidelberg, Germany, Workshop on Neutrino, Dark Matter and Beyond the Standard Model Physics (LAUNCH2017) (14.-15.09.2017)

**Queiroz, F., Rodejohann, W.**

Heidelberg, Germany, Workshop on Quantum Dynamics in Physics, Chemistry and Biology (17.11.2017)  
**Keitel, C. H., Evers, J.**

Heidelberg, Germany, Workshop: From Cosmochemistry to Solar Neutrinos (07.06.2017)  
**Schoppmann, S.**

Heidelberg, Germany, XXVIII International Conference on Neutrino Physics and Astrophysics (Neutrino 2018) (04.-09.06.2018)  
**Akhmedov, E., Berneiser, A., Buck, C., Lindner, M., Marrodan Undagoitia, T., Rodejohann, W., Schoppmann, S., Simgen, H., Smirnov, A.Y.**

Kazan, Russia, Seminar 9 of the 26<sup>th</sup> Annual International Laser Physics Workshop (LPHYS'17) (17.-21.07.2017)  
**Keitel, C. H., Di Piazza, A.**

Lanzhou, China, Sino-German Symposium on "Precision Physics Experiments with Stored Highly Charged Ions at Low Energies" (12.-16.08.2018)  
**Blaum, K.**

Lerici, Italy, International Workshop on Time Domain Control of Atomic Shell for Nuclear Excitation (07.-09.10.2019)  
**Pálffy-Buß, A.**

Madison, WI-USA, 36<sup>th</sup> International Cosmic Ray Conference, ICRC 2019 (34.07.-01.08.2019)  
**Hinton, J., Zanin, R.**

Milton Keynes, United Kingdom, The 11<sup>th</sup> International Conference on Position Sensitive Detectors (03.-08.09.2017)  
**Hinton, J.**

Moscow, Russia, 10<sup>th</sup> International Workshop on Ring Imaging Cherenkov Detectors, RICH 2018 (29.07.-04.08.2018)  
**Hofmann, W.**

Moscow, Russia, High Energy Phenomena in Relativistic Outflows, HEPRO-VI (11.-15.09.2017)  
**Aharonian, F.**

Neunkirchen, Germany, IMPRS-QD Kick-off Meeting (20.-21.09.2019)  
**Keitel, C. H., Evers, J.**

Nottingham, United Kingdom, Seminar 9 of the 27<sup>th</sup> Annual International Laser Physics Workshop (LPHYS'18) (16.-20.07.2018)  
**Keitel, C. H., Di Piazza, A.**

Oxford, UK; Workshop on Plasma Astrophysics: From the Laboratory to the Non-Thermal Universe (05.-07.07.2017)  
**Giacinti, G., Reville, B.**

Platja d'Aro, Spain, PHAROS conference 2019: "The multi-messenger physics and the astrophysics of neutron stars" (22.-26.04.2019)  
**Zanin, R.**

Riezlern, Austria, Meeting on Extreme Atomic Systems (38<sup>th</sup> EAS) (29.-03.02.2017)  
**Pfeifer, T.**

Riezlern, Austria, Meeting on Extreme Atomic Systems (39<sup>th</sup> EAS) (18.-23.02.2018)  
**Pfeifer, T.**

Riezlern, Austria, Meeting on Extreme Atomic Systems (40<sup>th</sup> EAS) (17.-22.02.2019)  
**Pfeifer, T.**

Rome, Italy, Workshop "Neutron stars: towards a global view" (19.-21.03.2018)  
**Zanin, R.**

Seoul, Korea, International workshop on "New Physics at the Low Energy Scales" NEPLES 2019 (23.-27.09.2019)  
**Smirnov A. Y.**

Singapore, Max Planck Kick-off Workshop "From a single particle to many-body quantum physics" (15.-17.02.2017)  
**Blaum, K.**

Stanford, CA, USA, The third Extremely High Intensity Laser Physics Conference (ExHILP 2019) (03.-06.09.2019)  
**Keitel, C. H., Di Piazza, A.**

Stockholm, Sweden, Workshop PHYSTAT Dark Matter 2019 (31.07.-02.08.2019)  
**Hasterok, C.**

Sudbury, ON, Canada, Topics in astroparticle and underground physics, TAUP 2017 (24.-28.07.2017)  
**Hinton, J., Lindner, M., Smirnov, A. Y.**

Sydney, Australia, TeV Particle Astrophysics 2019, Galactic Sources (02.-06.12.2019)  
**Celli, S.**

Tegernsee, Germany, 10<sup>th</sup> Ringberg Workshop on Science with FELs (24.-27.02.2019)

**Moshhammer, R.** Schlichting, I. (MPIMF, Heidelberg)

Tegernsee, Germany, 8<sup>th</sup> Ringberg Workshop on Science with FELs (05.-08.02.2017)

**Moshhammer, R.** Schlichting, I. (MPIMF, Heidelberg)

Tegernsee, Germany, 9<sup>th</sup> Ringberg Workshop on Science with FELs (07.-10.02.2018)

**Moshhammer, R.** Schlichting, I. (MPIMF, Heidelberg)

Toyama, Japan, 16<sup>th</sup> International Conference on Topics in Astroparticle and Underground Physics (TAUP2019) (09.-13.09.2019)

**Lindner, M., Rodejohann, W., Smirnov, A. Y.**

Trieste, Italy, ICTP Advanced workshop „Physics of Atmospheric Neutrinos" (PANE-2018) (28.05.-01.06.2018)

**Smirnov A. Y.**

Venice, Italy, The “XVIII International Workshop on Neutrino Telescopes” (18.-22.03.2019)

**Smirnov A. Y.**

Yerevan, Armenia, Workshop “Very High Energy Phenomena Around Supermassive Black Holes”, supported by Volkswagen Foundation (08.-12.04.2019)

**Aharonian, F., Rieger, F.**

# Institutional Collaborations

## **Attosecond XUV + NIR experiments resolved in reaction microscopes:**

University of Freiburg, Germany

## **BASE:**

RIKEN, Japan

University of Hannover, Germany

CERN, Switzerland

GSI, Germany

University of Tokyo, Japan

University of Mainz, Germany

Helmholtz-Institut Mainz, Germany

PTB, Germany

## **CEP dependence of atomic and molecular strong-field processes:**

MPI für Quantenoptik Garching, Germany

## **COLLAPS:**

KU Leuven, Belgium

Universität Mainz, Germany

CERN Geneva, Switzerland

University of Manchester, UK

University of Liverpool, UK

TU Darmstadt, Germany

IPNO, IN2P3 Paris, France

Beijing University, China

## **Compact Gamma-Ray binaries:**

University of Barcelona, Spain

## **Cryogenic Experiments on Trapped Molecular and Cluster Ions:**

Universität Greifswald, Germany

Weizmann Institute of Science, Rehovot, Israel

TU Kaiserslautern, Germany

## **Cryogenic Multi-Pixel Microcalorimeters for Molecular Fragments:**

Universität Heidelberg, Germany

## **Cryogenic Storage Ring:**

Weizmann Institute of Science, Rehovot, Israel

Universität Greifswald, Germany

Université Catholique de Louvain-La-Neuve, Belgium

Universität Giessen, Germany

TU Kaiserslautern, Germany

Columbia University, New York, USA

## **CTA:**

Alikhanyan National Science Laboratory, Physics Institute Yerevan, Yerevan, Armenia

School of Physical Sciences, University of Adelaide, Adelaide, Australia

School of Physics, University of New South Wales, Sydney, Australia

School of Physics, University of Sydney, Sydney, Australia

Research School of Astronomy and Astrophysics, Australian National University, Canberra, Australia

Western Sydney University, Penrith, Australia

School of Physics and Astronomy, Monash University, Melbourne, Australia

Institut für Astro- und Teilchenphysik, Leopold-Franzens-Universität, Innsbruck, Austria

Centro de Ciências Naturais e Humanas, Universidade Federal do ABC, Santo André - SP, Brazil

Centro Brasileiro de Pesquisas Físicas, Rio de Janeiro, Brazil

Instituto de Astronomia, Geofísica, e Ciências Atmosféricas, Universidade de São Paulo, São Paulo, Brazil

Instituto de Física, Universidade de São Paulo, São Paulo, Brazil

Instituto de Física de São Carlos, Universidade de São Paulo, São Carlos - SP, Brazil

Instituto de Física, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil

Núcleo de Formação de Professores, Universidade Federal de São Carlos, São Carlos - SP, Brazil

ICTP-South American Institute for Fundamental Research - Instituto de Física Teórica da UNESP, São Paulo, Brazil

Universidade Cruzeiro do Sul, Núcleo de Astrofísica Teórica, NAT/UCS, Libertade - SP, Brazil

Escola de Artes, Ciências e Humanidades, Universidade de São Paulo, São Paulo, Brazil

Universidade Federal Do Paraná - Setor Palotina, Departamento de Engenharias e Exatas, Palotina - Paraná, Brazil

Escola de Engenharia de Lorena, Universidade de São Paulo, Lorena, Brazil

Institute for Nuclear Research and Nuclear Energy, BAS, Sofia, Bulgaria  
 Institute of Astronomy, BAS, Sofia, Bulgaria  
 Astronomy Department of Faculty of Physics, Sofia University, Sofia, Bulgaria  
 The University of Manitoba, Winnipeg, Manitoba, Canada  
 Universidad Católica del Norte, Antofagasta, Chile  
 Facultad de ciencias físicas y matemáticas, Universidad de Chile, Santiago, Chile  
 Universidad de Concepción, Concepción, Chile  
 Pontificia Universidad Católica de Chile, Santiago, Chile  
 Universidad Técnica Federico Santa María, Valparaíso, Chile  
 Universidad Andrés Bello UNAB, Santiago, Chile  
 Universidad de Valparaíso, Valparaíso, Chile  
 Faculty of electrical engineering and computing, University of Zagreb, Zagreb, Croatia  
 FESB, University of Split, Croatia  
 Josip Juraj Strossmayer University of Osijek, Osijek, Croatia  
 Rudjer Boskovic Institute, Zagreb, Croatia  
 University of Rijeka, Physics Department, Rijeka, Croatia  
 Astronomical Institute of the Czech Academy of Sciences ASCR, Ondřejov, Croatia  
 Charles University, Institute of Particle and Nuclear Physics, Prague, Czech Republic  
 Institute of Physics of the Academy of Sciences of the Czech Republic, Prague, Czech Republic  
 Palacky University Olomouc, Faculty of Science, RCPTM, Olomouc, Czech Republic  
 Aalto University, Aalto, Finland  
 University of Helsinki, Helsinki, Finland  
 Tuorla Observatory, University of Turku, Piikkiö, Finland  
 APC, Univ Paris Diderot, CNRS/IN2P3, CEA/Irfu, Obs de Paris, Sorbonne Paris Cité, France  
 CEA/DSM/IRFU, CEA-Saclay, Gif-sur-Yvette, France  
 Centre de Physique des Particules de Marseille, CPPM, Aix-Marseille Université, CNRS/IN2P3, Marseille, France  
 Côte d'Azur Observatory OCA, Nice, France  
 Institut de Planétologie et d'Astrophysique de Grenoble, INSU/CNRS, Université Joseph Fourier, Grenoble, France  
 Institut de Recherche en Astrophysique et Planétologie, irap, CNRS-INSU, Université Paul Sabatier, Toulouse, France  
 Laboratoire d'Annecy-le-Vieux de Physique des Particules LAPP, Université de Savoie, CNRS/IN2P3, Annecy-le-Vieux, France  
 Laboratoire Leprince-Ringuet LLR, École Polytechnique, UMR 7638, CNRS, Palaiseau-Paris, France  
 Laboratoire Univers et Particules de Montpellier, Université de Montpellier, CNRS/IN2P3, Montpellier, France  
 Sorbonne Universités, UPMC, Université Paris Diderot, Sorbonne Paris Cité, CNRS, Laboratoire de Physique Nucléaire et de Hautes Energies, LPNHE, Paris, France  
 LUTH and GEPI, Observatoire de Paris, CNRS, PSL Research University, Meudon, France  
 Université Paris-Sud, Institut de Physique Nucléaire d'Orsay, IPNO, IN2P3/CNRS et Université Paris-Sud, UMR 8608, Orsay, France  
 Univ. Bordeaux, CNRS, IN2P3, CENBG, UMR 5797, Gradignan, France  
 Cherenkov Telescope Array Observatory gGmbH, Heidelberg, Germany  
 Institut für Physik, Humboldt-Universität zu Berlin, Berlin, Germany  
 Institut für Theoretische Physik, Weltraum- und Astrophysik, Ruhr-Universität Bochum, Germany  
 Department of Physics, TU Dortmund, Dortmund, Germany  
 Universität Erlangen-Nürnberg, Physikalisches Institut, Erlangen, Germany  
 Universität Hamburg, Institut für Experimentalphysik, Hamburg, Germany  
 Landessternwarte, Universität Heidelberg, Heidelberg, Germany  
 Max-Planck-Institut für Physik, München, Germany  
 Institut für Physik und Astronomie, Universität Potsdam, Germany  
 Institut für Astronomie und Astrophysik, Universität Tübingen, Tübingen, Germany  
 Institut für Theoretische Physik und Astrophysik, Universität Würzburg, Würzburg, Germany  
 Deutsches Elektronen-Synchrotron, Zeuthen, Germany  
 School of Physics, Aristotle University, Thessaloniki, Greece  
 National Technical University of Athens, Department of Physics, Athens, Greece  
 Faculty of Physics, National and Kapodestrian University of Athens, Athens, Greece  
 Bhabha Atomic Research Centre, BARC, Trombay-Mumbai, India  
 Saha Institute of Nuclear Physics, Kolkata, India  
 Tata Institute of Fundamental Research, TIFR, Mumbai, India  
 Dublin Institute for Advanced Studies, Dublin, Ireland  
 University College Dublin, Dublin, Ireland  
 Dublin City University, Dublin, Ireland  
 Department of Natural Sciences, The Open University of Israel, Ranaana, Israel  
 INAF- IAPS Istituto di Astrofisica e Planetologia spaziali, Rome, Italy  
 INAF – Istituto di Astrofisica Spaziale e Fisica Cosmica di Palermo, Italy  
 INAF – IRA Istituto di Radioastronomia, Bologna, Italy  
 INAF – Osservatorio Astrofisico di Arcetri, Firenze, Italy  
 INAF – Osservatorio Astronomico di Bologna, Italy  
 INAF – Osservatorio Astronomico di Brera, Milano, Italy  
 INAF – Osservatorio Astrofisico di Capodimonte, Italy

INAF – Osservatorio Astrofisico di Catania, Italy  
 INAF – Osservatorio Astronomico di Padova, Italy  
 INAF – Osservatorio Astronomico di Palermo, Italy  
 INAF – Osservatorio Astronomico di Roma, Italy  
 INAF – Osservatorio Astronomico di Trieste and INFN Sezione di Trieste, Udine, Italy  
 INAF – Telescopio Nazionale Galileo, San Miguel de La Palma, Spain run by the “Fundación Galileo Galilei - INAF, Fundación Canaria”, Rome, Italy  
 INFN Dipartimento di Scienze Fisiche e Chimiche - Università degli Studi dell'Aquila and Gran Sasso Science Institute LNGS, L'Aquila, Italy  
 INFN Sezione di Catania, Italy  
 INFN Sezione di Napoli, Italy  
 INFN Sezione di Perugia, Italy  
 INFN Sezione di Pisa, Italy  
 INFN Sezione di Roma Tor Vergata, Italy  
 INFN Sezione di Roma La Sapienza, Italy  
 INFN Sezione di Torino, Italy  
 Istituto di Astrofisica Spaziale e Fisica Cosmica di Bologna, Italy  
 Istituto di Astrofisica Spaziale e Fisica Cosmica di Milano, Italy  
 IUSS –Istituto Universitario di Studi Superiori di Pavia, Pavia, Italy  
 Università degli Studi di Bari and INFN Sezione di Bari, Italy  
 Università degli Studi di Padova and INFN Sezione di Padova, Italy  
 Università degli Studi di Siena, DSFTA, Siena, Italy  
 Università degli Studi di Torino  
 Università degli Studi di Udine, Udine, Italy  
 Department of Applied Physics, University of Miyazaki, Japan  
 Department of Earth and Space Science, Graduate School of Science, Osaka University, Toyonaka, Japan  
 Department of Physical Science, Hiroshima University, Japan  
 Department of Physics and Astrophysics, Nagoya University, Japan  
 Department of Physics and Mathematics, Aoyama Gakuin University, Fuchinobe, Japan  
 Department of Physics, Graduate School of Science, University of Tokyo, Tokyo, Japan  
 Dept. of Physics, Kindai University, Kawakaei, Japan  
 Department of Physics, Konan University, Kobe, Japan  
 Division of Physics and Astronomy, Graduate School of Science, Kyoto University, Japan  
 Department of Physics, Rikkyo University, Tokyo Japan  
 Department of Physics, Tokai University, Hiratsuka, Japan  
 Department of Physics, Yamagata University, Japan  
 Faculty of Science and Engineering, Waseda University, Tokyo, Japan  
 Faculty of Management Information, Yamanashi Gakuin University, Kofu, Japan  
 Faculty of Science, Ibaraki University, Mito, Japan  
 Graduate School of Science and Engineering, Saitama University, Japan  
 Hiroshima Astrophysical Science Center, Hiroshima University, Higashi, Japan  
 Institute for Cosmic Ray Research, University of Tokyo, Kashiwa, Japan  
 Institute for Space-Earth Environmental Research ISEE, Nagoya University, Japan  
 Institute of Particle and Nuclear Studies, KEK, High Energy Accelerator Research Organization, Tsukuba, Japan  
 Institute of Space and Astronautical Science, JAXA, Sagami-hara, Japan  
 Institute of Socio-Arts and Sciences, University of Tokushima, Japan  
 Kobayashi-Maskawa Institute, KMI for the Origin of Particles and the Universe, Nagoya University, Japan  
 Kumamoto University, Kurokami chuo-ku Kumamoto, Japan  
 Riken Institute of Physical and Chemical Research, Wako, Saitama, Japan  
 School of Allied Health Sciences, Kitasato University, Sagami-hara, Japan  
 Tokai University Hospital, Kanagawa, Japan  
 Tohoku University, Astronomical Institute, Sendai, Japan  
 Yukawa Institute for Theoretical Physics, Kyoto University, Kyoto, Japan  
 Universidad Nacional Autónoma de México, Mexico City, Mexico  
 University of Namibia, Department of Physics, Windhoek, Namibia  
 GRAPPA, University of Amsterdam, Science Park, Amsterdam, The Netherlands  
 KVI - Center for Advanced Radiation Technology, University of Groningen, Groningen, The Netherlands  
 Radboud University Nijmegen, Nijmegen, The Netherlands  
 Department of Physics and Technology, University of Bergen, Bergen, Norway  
 Academic Computer Centre CYFRONET AGH, Cracow, Poland  
 Copernicus Astronomical Center, Polish Academy of Sciences, Warsaw, Poland  
 Faculty of Computer Science and Electronics and Telecommunications, AGH University of Science and Technology, Cracow, Poland  
 Faculty of Physics, Astronomy and Applied Computer Science, Jagiellonian University, Cracow, Poland  
 Faculty of Physics and Astronomy of the University of Zielona Góra, Poland  
 Faculty of Physics and Applied Computer Science, University of Łódź, Łódź, Poland

Faculty of Physics, University of Warsaw, Warsaw, Poland  
 National Centre for Nuclear Research, Narodowe Centrum Badań Jądrowych, Warsaw-Świerk, Poland  
 Space Research Centre, Polish Academy of Sciences, Warsaw, Poland  
 The Henryk Niewodniczański Institute of Nuclear Physics, Polish Academy of Sciences, Cracow, Poland  
 Toruń Centre for Astronomy, Nicolaus Copernicus University, Torun, Poland  
 University of Białystok, Faculty of Physics, Białystok, Poland  
 Warsaw University of Technology, Warsaw, Poland  
 Center for Astrophysics and Cosmology, University of Nova Gorica, Slovenia  
 Centre for Space Research, North–West University, Potchefstroom, South Africa  
 University of the Free State, Bloemfontein, South Africa  
 University of Johannesburg, Department of Physics, Auckland Park, Johannesburg, South Africa  
 School of Physics, University of the Witwatersrand, Johannesburg, South Africa  
 Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas CIEMAT, Madrid, Spain  
 Departament d’Astronomia i Meteorologia, Institut de Ciències del Cosmos, Universitat de Barcelona, IEEC-UB, Barcelona, Spain  
 Escuela Politécnica Superior de Jaén, Universidad de Jaén, Jaén, Spain  
 Grupo de Altas Energías, Universidad Complutense de Madrid, Madrid, Spain  
 Grupo de Electronica, Universidad Complutense de Madrid, Madrid, Spain  
 Instituto de Astrofísica de Canarias, La Laguna, Tenerife, Spain  
 Instituto de Astrofísica de Andalucía-CSIC, Granada, Spain  
 Instituto de Física Teórica UAM/CSIC and Departamento de Física Teórica, Campus Cantoblanco, Universidad Autónoma de Madrid, Spain  
 Institut de Ciències de L’Espai, IEEC-CSIC and Institució Catalana de Recerca i Estudis Avançats, ICREA, Barcelona, Spain  
 Institut de Física d’Altes Energies, IFAE, The Barcelona Institute of Science and Technology, Barcelona, Spain  
 Port d’Informació Científica, Bellaterra-Barcelona, Spain  
 Unitat de Física de les Radiacions, Departament de Física, and CERES-IEEC, Universitat Autònoma de Barcelona, Bellaterra-Barcelona, Spain  
 Department of Physics and Astronomy, Uppsala University, Uppsala, Sweden  
 Linnaeus University, Växjö, Sweden  
 Lund Observatory, Lund, Sweden  
 Oskar Klein Centre, Department of Physics, Royal Institute of Technology, KTH, Stockholm, Sweden  
 Stockholm University, Stockholm, Sweden  
 Dept. of Physics and Astronomy, Uppsala University, Sweden  
 ETH Zürich, Institute for Particle Physics, Zürich, Switzerland  
 ISDC Data Centre for Astrophysics, Observatory of Geneva, University of Geneva, Versoix, Switzerland  
 Physik-Institut, Universität Zürich, Zürich, Switzerland  
 University of Geneva, Département de Physique Nucléaire et Corpusculaire, Geneva, Switzerland  
 National Astronomical Research Institute of Thailand, Chiangmai, Thailand  
 Astronomical Observatory of Taras Shevchenko National University of Kyiv, Kyiv, Ukraine  
 Astronomical Observatory of Ivan Franko National University of Lviv, Lviv, Ukraine  
 Pidstryhach Institute for Applied Problems in Mechanics and Mathematics NASU, Lviv, Ukraine  
 Centre for Astrophysics Research, Science & Technology Research Institute, University of Hertfordshire, Hertfordshire, UK  
 Dept. of Physics and Centre for Advanced Instrumentation, Durham University, Durham, UK  
 Dept. of Physics and Astronomy, University of Leicester, Leicester, UK  
 Department of Physics and Astronomy, University of Sheffield, Sheffield, UK  
 King’s College London, London, UK  
 Queen’s University Belfast, School of Mathematics and Physics, Belfast, UK  
 School of Physics & Astronomy, University of Edinburgh, Edinburgh, UK  
 School of Physics and Astronomy, University of Nottingham, Nottingham, UK  
 School of Physics & Astronomy, University of Southampton, Southampton, UK  
 STFC Rutherford Appleton Laboratory, Didcot, UK  
 University of Bath, Bath, UK  
 University of Liverpool, Oliver Lodge Laboratory, Liverpool, UK  
 University of Oxford, Department of Physics, Oxford, UK  
 Argonne National Laboratory, Argonne-IL, USA  
 Astronomy Department, Adler Planetarium and Astronomy Museum, Chicago-IL, USA  
 Department of Physics and Astronomy and the Bartol Research Institute, University of Delaware, Newark-DE, USA  
 Dept. of Physics & Astronomy, Barnard College, Columbia University, New York-NY, USA  
 Department of Physics and Astronomy, Iowa State University of Science and Technology, Ames-IA, USA  
 Department of Physics and Astronomy, University of California, Los Angeles-CA, USA  
 Department of Physics and Astronomy, University of Utah, Salt Lake City-UT, USA  
 Dept. of Astronomy and Astrophysics, Pennsylvania State University, University Park-PA, USA  
 Department of Physics, Purdue University, West Lafayette-IN, USA  
 Department of Physics, Washington University, St. Louis-MO, USA  
 Enrico Fermi Institute, University of Chicago, Chicago-IL, USA  
 Harvard-Smithsonian Center for Astrophysics, Cambridge-MA, USA  
 Kavli Institute for Particle Astrophysics and Cosmology, Department of Physics and SLAC National Accelerator Laboratory,



Stanford University, Menlo Park-CA, USA  
Santa Cruz Institute for Particle Physics and Department of Physics, University of California, Santa Cruz-CA, USA  
School of Physics and Astronomy, University of Minnesota, Minneapolis-MI, USA  
Center for Relativistic Astrophysics and School of Physics, Georgia Institute of Technology, Atlanta-GA, USA  
Texas Tech University, Lubbock-TX, USA  
University of Alabama in Huntsville, Center for Space Physics and Aeronomic Research, Huntsville-AL, USA  
University of Hawai'i at Manoa, Honolulu-HI, USA  
University of California, Davis-CA, USA  
University of Iowa, Department of Physics and Astronomy, Iowa City-IA, USA  
University of Wisconsin, Madison-WI, USA  
Yale University, Department of Physics and Astronomy, New Haven-CT, USA

**Dielectronic Recombination of Multicharged Tungsten Ions:**

Universität Giessen, Germany  
University of Glasgow, United Kingdom  
Columbia University, New York, USA

**Dissociative Recombination of Molecular Ions:**

Purdue University, USA  
University of Central Florida, USA  
University of Le Havre, France  
Université Catholique de Louvain-La-Neuve, Belgium  
Columbia University, New York, USA

**Double Chooz:**

CEA Saclay, IRFU, France  
CENBG, Bordeaux, France  
APC Paris, France  
Subatech Nantes, France  
IPHC Strasbourg, France  
Technische Universitaet Muenchen, Germany  
EKU Tuebingen, Germany  
RWTH Aachen, Germany  
Argonne National Laboratory, USA  
University of Chicago, USA  
Drexel University, USA  
University of Alabama, USA  
Illinois Institute of Technology, USA  
University of Notre Dame, USA  
CIEMAT Madrid, Spain  
Tohoku University, Sendai, Japan  
Kobe University, Japan  
Tokyo Institute of Technology, Japan  
Tokyo Metropolitan University, Japan  
Hiroshima Institute of Technology, Japan  
RAS Moscow, Russia  
NRC Kurchatov Institute Moscow, Russia  
CBPF Rio de Janeiro, Brazil  
UNICAMP, Brazil  
Kitasato University, Japan

**EMMI:**

Université VI, Paris, France  
GSI Darmstadt, Germany  
Forschungszentrum Jülich, Germany  
Universität Heidelberg, Germany  
Universität Frankfurt, Germany  
FIAS, Frankfurt, Germany  
TU Darmstadt, Germany  
Universität Münster, Germany  
RIKEN, Japan  
University of Tokyo, Japan  
LBNL, Berkeley, USA  
JINA, USA

**ESCAPE:**

Centre National De La Recherche Scientifique, CNRS, France  
European Organization for Nuclear Research, CERN, Europe

Stichting Nederlandse Wetenschappelijk Onderzoek Instituten, The Netherlands  
 Friedrich-Alexander-Universität Erlangen Nürnberg, Germany  
 Istituto Nazionale Di Astrofisica, INAF, Italy  
 European Southern Observatory, ESO, Europe  
 Leibniz-Institut für Astrophysik Potsdam, AIP, Germany  
 Facility for Antiproton and Ion Research in Europe GmbH, Germany  
 GSI Helmholtzzentrum für Schwerionenforschung GmbH, Germany  
 Instituto de Fisica de Altas Energias, IFAE, Spain  
 Joint Institute for Very Long Baseline Interferometry as a European Research Infrastructure Consortium, JIV-ERIC, The Netherlands  
 Leibniz-Institut für Sonnenphysik, Germany  
 Istituto Nazionale di Fisica Nucleare, INFN, Italy  
 Koninklijke Sterrenwacht van België, Belgium  
 SKA Organisation, United Kingdom  
 Universidad Complutense de Madrid, Spain  
 The University of Edinburgh, United Kingdom  
 Ruprecht-Karls-Universität Heidelberg, Germany  
 Cherenkov Telescope Array Observatory gemeinnützige GmbH – CTAO, Germany  
 European Gravitational Observatory(EGO, Osservatorio Gravitazio Naleeuropeo, Italy  
 Agencia Estatal Consejo Superior Deinvestigaciones Cientificas, CSIC, Spain  
 Instituto Nacional de Tecnica Aeroespacial Esteban Terradas, INTA, Spain  
 The Open University – OU, United Kingdom  
 Universita Degli Studi di Roma Tor Vergata, Italy  
 HITS gGmbH, Germany  
 Stiftung Deutsches Elektronen-Synchrotron DESY, Germany  
 Rijksuniversiteit Groningen, The Netherlands  
 SURFSARA BV, The Netherlands  
 OROBIX Srl, Italy  
 Trust-It Services Limited, United Kingdom

**Fano resonance build-up:**

Technische Universität Wien, Vienna, Austria  
 Kansas State University, Manhattan, KS, USA

**FLAIR:**

Stefan Meyer Institut für subatomare Physik Wien, Austria  
 TU Wien, Austria  
 York University, Toronto, Canada,  
 TRIUMF Vancouver, Canada  
 Aarhus University, Denmark  
 Ecole Normale Supérieure and Université P. et M. Curie Paris, France  
 Humboldt-Universität Berlin, Germany  
 GSI Darmstadt, Germany  
 TU Dresden, Germany  
 Universität Frankfurt, Germany  
 MPI für Quantenoptik, Garching, Germany  
 Universität Gießen, Germany  
 Forschungszentrum Jülich, Germany  
 Universität Mainz, Germany  
 Universität Tübingen, Germany  
 KFKI Research Institute for Particle and Nuclear Physics Budapest, Hungary  
 Institute of Nuclear Research of the Hungarian Academy of Sciences, ATOMKI, Debrecen, Hungary  
 University of Debrecen, Hungary  
 Variable Energy Cyclotron Center Kolkata, India  
 Università di Brescia, Italy  
 Università degli Studi di Firenze, Italy  
 Istituto Nazionale di Fisica Nucleare Genova, Italy  
 RIKEN Wako, Japan  
 University of Tokyo, Japan  
 Vrije Universiteit Amsterdam, The Netherlands  
 FOM Institute for Atomic and Molecular Physics Amsterdam, The Netherlands  
 Warsaw University, Poland  
 Soltan Institute for Nuclear Studies, Warsaw, Poland  
 Institute of Spectroscopy of the RAS Troitsk, Russia  
 Institute of Experimental and Theoretical Physics Moscow, Russia  
 JINR Dubna, Russia

Moscow State University, Russia  
D.I. Mendeleev Institute for Metrology St. Petersburg, Russia  
St. Petersburg State University, Russia  
St. Petersburg Nuclear Physics Institute, Russia  
Manne Siegbahn Laboratory Stockholm, Sweden  
Stockholm University, Sweden  
Imperial College London, UK  
Queen's University Belfast, UK  
University of Wales Swansea, UK  
Indiana University Bloomington, USA  
Florida State University, USA  
Harvard University Cambridge, USA  
Pbar medical LLC Santa Fe, USA  
University of New Mexico Albuquerque, USA  
Texas A&M University College Station, USA

**Fundamental physics and variation of fundamental constants:**

University of New South Wales, Sydney, Australia  
University of Maryland, College Park, USA  
University of Delaware, USA

**Galaxy and Mass Assembly, GAMA:**

Anglo Australian Observatory  
ESO  
ICRAR/University of Western Australia  
ROE, UK  
Swinburne University, Australia  
University of St Andrews, UK  
University of Cardiff, UK  
University of Edinburgh, UK  
University of Nottingham, UK  
University of Central Lancashire, UK  
University of Liverpool, UK  
University of Sydney, Australia  
University of Cape Town, South Africa  
University of Hamburg, Germany  
University of Louisville, USA

**Gamma-rays from Molecular Clouds:**

University of Nagoya, Japan

**GERDA:**

Institute of Physics, Jagellonian University, Cracow, Poland  
Institut für Kern- und Teilchenphysik, Technische Universität Dresden, Germany  
Joint Institute for Nuclear Research, Dubna, Russia  
European Commission, JRC-Geel, Geel, Belgium  
INR Institute for Nuclear Research of the Russian Academy of Sciences, Moscow, Russia  
ITEP NRC KI, Institute for Theoretical and Experimental Physics, National Research Center "Kurchatov Institute Moscow, Russia  
NRC KI, Kurchatov Institute National Research Center "Kurchatov Institute" Moscow, Russia  
INFN Laboratori Nazionali del Gran Sasso, LNGS, and Gran Sasso Science Institute, Assergi, Italy  
INFN Milano Bicocca and Università Milano Bicocca, Italy  
INFN Milano and Università degli Studi di Milano, Italy  
INFN Laboratori Nazionali del Sud, Catania, Italy  
INFN Padova, Padua, Italy  
Max-Planck-Institut für Physik, München, Germany  
Physik Department and Excellence Cluster Universe, Technische Universität München, Germany  
Dipartimento di Fisica e Astronomia, Università di Padova, Italy  
Center for Astro and Particle Physics, Eberhard Karls Universität Tübingen, Germany  
Physik Institut, University of Zürich, Switzerland

**GLOBES:**

Fermilab, USA  
Virginia Tech, Blacksburg, USA  
Universitaet Würzburg, Würzburg, Germany

**H.E.S.S.:**

National Academy of Sciences of the Republic of Armenia & High Energy Astrophysics Laboratory, RAU, Yerevan, Republic of Armenia

Yerevan Physics Institute, Yerevan, Republic of Armenia  
 School of Chemistry & Physics, University of Adelaide, Adelaide, Australia  
 Institut für Astro- und Teilchenphysik, Leopold-Franzens-Universität Innsbruck, Innsbruck, Austria  
 APC, AstroParticule et Cosmologie, Université Paris Diderot, CNRS/IN2P3, CEA/Irfu, Observatoire de Paris, Sorbonne Paris Cité, Paris, France  
 CEA Saclay, DSM/Irfu, Gif-Sur-Yvette, France  
 CENBG, Université Bordeaux, CNRS/IN2P3, Centre d'Études Nucléaires de Bordeaux Gradignan, Gradignan, France  
 CPPM, Aix Marseille Université, CNRS/IN2P3, UMR 7346, Marseille, France  
 IPAG, Université de Grenoble Alpes, CNRS, Grenoble, France  
 LAPP, Laboratoire d'Annecy-le-Vieux de Physique des Particules, Université Savoie Mont-Blanc, CNRS/IN2P3, Annecy-le-Vieux, France  
 LLR, Laboratoire Leprince-Ringuet, Ecole Polytechnique, CNRS/IN2P3, Palaiseau, France  
 LPNHE, Laboratoire de Physique Nucléaire et de Hautes Energies, CNRS, Sorbonne Universités, UPMC Université de Paris  
 IPAG, Univ. Grenoble Alpes, CNRS, Grenoble, France  
 Paris 06, Université Paris Diderot, Sorbonne, Paris Cité, France  
 LUPM, Laboratoire Univers et Particules de Montpellier, Université Montpellier, CNRS/IN2P3, Montpellier, France  
 LUTH, Observatoire de Paris, PSL Research University, CNRS, Université Paris Diderot, Meudon, France  
 Landessternwarte, Universität Heidelberg, Heidelberg, Germany  
 DESY Zeuthen, Zeuthen, Germany  
 Institut für Physik und Astronomie, Universität Potsdam, Potsdam, Germany  
 Universität Hamburg, Institut für Experimentalphysik, Hamburg, Germany  
 Institut für Physik, Humboldt-Universität zu Berlin, Berlin, Germany  
 Institut für Astronomie und Astrophysik, Universität Tübingen, Tübingen, Germany  
 ECAP, Friedrich-Alexander-Universität Erlangen-Nürnberg, Centre for Astroparticle Physics, Erlangen, Germany  
 Institut für Theoretische Physik, Lehrstuhl IV: Weltraum und Astrophysik, Ruhr-Universität Bochum, Bochum, Germany  
 Dublin Institute for Advanced Studies, Dublin, Ireland  
 JAXA, Department of Physics, Rikkyo University, Tokyo, Japan  
 Kavli IPMU, Kavli Institute for the Physics and Mathematics of the Universe, UTIAS, The University of Tokyo Institutes for Advanced Study, The University of Tokyo, Kashiwa City, Japan  
 Department of Physics, The University of Tokyo, Tokyo, Japan  
 Riken, Saitama, Japan  
 UNAM, University of Namibia, Department of Physics, Windhoek, Namibia  
 Astronomical Observatory, The University of Warsaw, Warsaw, Poland  
 IFJ-PAN, Instytut Fizyki Jądrowej, Kraków, Poland  
 Nicolaus Copernicus Astronomical Center, Polish Academy of Sciences, Warsaw, Poland  
 Obserwatorium Astronomiczne, Uniwersytet Jagielloński, Kraków, Poland  
 Torun Centre for Astronomy, Faculty of Physics, Astronomy and Informatics, Nicolaus Copernicus University, Torun, Poland  
 Department of Physics, University of the Free State, Bloemfontein, South Africa  
 Unit for Space Physics, North-West University, Potchefstroom, South Africa  
 School of Physics, University of the Witwatersrand, Johannesburg, South Africa  
 Oskar Klein Centre, Department of Physics, Stockholm University, Albanova University Center, Stockholm, Sweden  
 Department of Physics and Electrical Engineering, Linnaeus University, Växjö, Sweden  
 GRAPPA, Institute of High-Energy Physics, University of Amsterdam, Science Park, Amsterdam, The Netherlands  
 Department of Physics and Astronomy, The University of Leicester, Leicester, United Kingdom  
 Department of Physics, The Oxford University, Oxford, United Kingdom

#### **HAWC:**

IFSC, Instituto de Física de São Carlos, Universidade de São Paulo, São Carlos, Brazil  
 National Institute for Nuclear Physics, Padova Division, Italy  
 BUAP, Benemérita Universidad Autónoma de Puebla, Facultad de Ciencias Físico Matemáticas, Puebla, Mexico  
 CINVESTAV, Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional, Mexico City, Mexico  
 INAOE, Instituto Nacional de Astrofísica Óptica y Electrónica, Puebla, Mexico  
 CIC-IPN, Centro de Investigación en Computación, Instituto Politécnico Nacional, Mexico City, Mexico  
 Departamento de Física, Centro Universitario de Ciencias Exactas e Ingenierías, Universidad de Guadalajara, Guadalajara, Jalisco, Mexico  
 Universidad Autónoma de Chiapas, Tuxtla Gutiérrez, Chiapas, Mexico  
 Universidad Autónoma del Estado de Hidalgo, Pachuca, Hidalgo, Mexico  
 IA-UNAM, Instituto de Astronomía, Universidad Nacional Autónoma de México, Mexico City, Mexico  
 ICN-UNAM, Instituto de Ciencias Nucleares, Universidad Nacional Autónoma de México, Mexico City, Mexico  
 IF-UNAM, Instituto de Física, Universidad Nacional Autónoma de México, Mexico City, Mexico  
 IGEF-UNAM, Instituto de Geofísica, Universidad Nacional Autónoma de México, Mexico City, Mexico  
 Universidad Michoacana de San Nicolás de Hidalgo, Morelia, Michoacán, Mexico  
 Universidad Politécnica de Pachuca, Hidalgo, Mexico  
 IFJ-PAN, Instytut Fizyki Jądrowej im Henryka Niewodniczanskiego Polskiej Akademii Nauk, Krakow, Poland  
 Department of Physics & Astronomy, George Mason University, Fairfax- VA, United States of America  
 School of Physics and Center for Relativistic Astrophysics, Georgia Institute of Technology, Atlanta-GA, United States of America

LNL, Los Alamos National Laboratory, Los Alamos-NM, United States of America  
Department of Physics & Astronomy, Michigan State University, East Lansing-MI, United States of America  
Department of Physics, Michigan Technological University, Houghton-MI, United States of America  
NASA/Goddard Space Flight Center, Greenbelt-MD, United States of America  
NASA/Marshall Space Flight Center, Huntsville-AL, United States of America  
Department of Physics, Pennsylvania State University, University Park-PA, United States of America  
Kavli Institute for Particle Astrophysics and Cosmology, Department of Physics and SLAC National Accelerator Laboratory, Stanford University, Menlo Park-CA, United States of America  
Department of Physics & Astronomy, University of California, Irvine, Irvine-CA, United States of America  
Department of Physics, University of Maryland, College Park-MD, United States of America  
Department of Physics & Astronomy, University of New Hampshire, Durham-NH, United States of America  
Department of Physics & Astronomy, University of New Mexico, Albuquerque-NM, United States of America  
Department of Physics & Astronomy, University of Rochester, Rochester-NY, United States of America  
Department of Physics & Astronomy, University of Utah, Salt Lake City-UT, United States of America  
WIPAC, Wisconsin IceCube Particle Astrophysics Center and University of Wisconsin-Madison, Madison-WI, United States of America

**High performance electron beam ion traps and sources:**

Michigan State University, USA  
TRIUMF, Vancouver, Canada  
Fudan University, Shanghai, China

**High repetition rates XUV table top sources:**

Lund University, Sweden  
VENTEON - Laser Quantum Company, Hannover, Germany  
Leibniz Universität Hannover, Germany  
Universität Heidelberg, Germany

**HITRAP:**

TU Wien, Austria  
GANIL Caen, France  
GSI Darmstadt, Germany  
Universität Mainz, Germany  
KVI Groningen, The Netherlands  
Jagellonian University Cracow, Poland  
University of Stockholm, Sweden  
Imperial College London, UK

**Investigations of interaction processes between ionizing radiation and matter using reaction microscopes:**

Physikalisch Technische Bundesanstalt (PTB) Braunschweig, Germany

**Invisibles EU FP7 ITN:**

Universidad Autonoma de Madrid, Spain  
University of Durham, UK  
Aarhus Universitet, Denmark  
CNRS, France  
University of Göttingen-DESY, Germany  
INFN, Italy  
Universidad de Barcelona, Spain  
Universidad de Valencia, Spain  
University of Zürich, Switzerland  
University of Southampton, UK

**ISAPP:**

Aarhus University, Denmark  
APC Paris, Paris 7, France  
Orsay(Paris XI), France  
Technical University Munich, Germany  
Heidelberg University, Germany  
MPI für Physik, München, Germany  
Institute for Experimental Nuclear Physics at Karlsruhe University, Germany  
Institute for Nuclear Physics at Forschungszentrum Karlsruhe, Germany  
Weizmann Institute, Israel  
Bari University, Italy  
Ferrara University, Italy  
Genova University, Italy  
Milano University, Italy  
Milano Bicocca University, Italy

Napoli University, Italy  
Padova University, Italy  
Roma Tor Vergata University, Italy  
Torino University, Italy  
Laboratori Nazionali del Gran Sasso, Italy  
Astroparticle Group at the Trondheim University, Norway  
INR, Russia  
RRC Kurchatov Laboratory, Russia  
Nova Gorica University, Slovenia  
IFIC/CSIC-Valencia University, Spain  
Santiago de Compostela University, Spain  
Theor. Phys. Department at the Universidad Autonoma de Madrid, Spain  
Cops Group at the Phys. Dept. of the Stockholm University, Sweden  
Oxford University, United Kingdom

**ISOLTRAP:**

Katholieke Universiteit Leuven Heverlee, Belgium  
CSNSM-IN2P3-CNRS, France  
Universität Greifswald, Germany  
GSI Darmstadt, Germany  
TU Dresden, Germany  
CERN Geneva, Switzerland  
University of Manchester, UK  
Michigan State University, USA  
University of Istanbul, Turkey

**Laser-induced electron diffraction (LIED) coincidence measurements with reaction microscopes:**

ICFO Barcelona, Spain

**LaSpec:**

Katholieke Universiteit Leuven Heverlee, Belgium  
University of Jyväskylä, Finland  
CNRS Orsay, France  
GSI Darmstadt, Germany  
Universität München, Germany  
Universität Mainz, Germany  
Universität Tübingen, Germany  
CERN Geneva, Switzerland  
University of Manchester, UK  
Lawrence Livermore National Laboratory, USA  
Pacific Northwest National Laboratory Richland, USA

**LEGEND:**

European Commission, Joint Research Centre, Directorate for Nuclear Safety & Security, Geel, Belgium  
Czech Technical University, Institute of Experimental and Applied Physics, Prague, Czech Republic  
Leibniz Institute for Crystal Growth, Berlin, Germany  
Max-Planck-Institut für Physik, München, Germany  
Physik Department, Technische Universität, München, Germany  
Technische Universität Dortmund, Dortmund, Germany  
University Tübingen, Tübingen, Germany  
Technische Universität Dresden, Dresden, Germany  
Department of Physical and Chemical Sciences University of L'Aquila, L'Aquila, Italy  
Istituto Nazionale di Fisica Nucleare, Laboratori Nazionali del Gran Sasso, Assergi, AQ, Italy  
Dipartimento di Fisica e Astronomia dell'Università di Padova, Italy  
Padova Istituto Nazionale di Fisica Nucleare, Padova, Italy  
Istituto Nazionale di Fisica Nucleare, Milano Bicocca, Milano, Italy  
Roma Tre University and INFN Roma Tre, Rome, Italy  
Milano Univ. and Milano Istituto Nazionale di Fisica Nucleare, Milano, Italy  
College of Physical Science and Technology, Sichuan University, Chengdu, People's Republic of China  
Key Laboratory of Particle and Radiation Imaging, Ministry of Education and Department of Engineering Physics, Tsinghua University, Beijing, People's Republic of China  
Institute of Physics, Jagiellonian University, Cracow, Poland  
National Research Centre "Kurchatov Institute", Moscow, Russia  
Institute for Nuclear Research of the Russian Academy of Sciences, Moscow, Russia  
National Research Nuclear University MEPhI, Moscow Engineering Physics Institute, Moscow, Russia  
Joint Institute for Nuclear Research, Dubna, Russia  
Department of Nuclear Physics and Biophysics, Comenius University, Bratislava, Slovakia

Physik-Institut, University of Zürich, Zürich, Switzerland  
 Institute of Physics, Academia Sinica, Taipei, Taiwan  
 University College London, London, United Kingdom  
 Department of Physics, Lancaster University, Lancaster, United Kingdom  
 University of Liverpool, Liverpool, United Kingdom  
 Department of Physics, Engineering Physics & Astronomy, Queen's University, Kingston, United Kingdom  
 Los Alamos National Laboratory, Los Alamos-NM, United States of America  
 Department of Physics and Astronomy, University of Tennessee, Knoxville-TN, United States of America  
 Institute for Nuclear and Particle Astrophysics and Nuclear Science Division, Lawrence Berkeley National Laboratory, Berkeley-CA, United States of America  
 Department of Physics and Astronomy, University of South Carolina, Columbia-SC, United States of America  
 Oak Ridge National Laboratory, Oak Ridge-TN, United States of America  
 Department of Physics, University of South Dakota, Vermillion-SD, United States of America  
 Department of Physics and Astronomy, University of New Mexico, Albuquerque-NM, United States of America  
 Department of Physics, Duke University, Durham-NC, United States of America  
 Triangle Universities Nuclear Laboratory, Durham-NC, United States of America  
 Center for Experimental Nuclear Physics and Astrophysics, and Department of Physics, University of Washington, Seattle-WA, United States of America  
 Department of Physics and Astronomy, University of North Carolina, Chapel Hill-NC, United States of America  
 Department of Nuclear Engineering, University of California, Berkeley-CA, United States of America  
 Department of Physics, University of California, Berkeley-CA, United States of America  
 Department of Physics, University of Texas at Austin, Austin-TX, United States of America  
 Tennessee Tech University, Cookeville-TN, United States of America  
 Department of Physics, Massachusetts Institute of Technology, Cambridge-MA, United States of America  
 South Dakota School of Mines and Technology, Rapid City-SD, United States of America  
 Department of Physics, North Carolina State University, Raleigh-NC, United States of America  
 Department of Physics, Princeton University, Princeton-NJ, United States of America

#### **LHCb:**

Laboratory of Mathematical and Subatomic Physics, Constantine, Algeria  
 School of Physics and Astronomy, Monash University, Melbourne, Australia  
 Centro Brasileiro de Pesquisas Físicas, CBPF, Rio de Janeiro, Brazil  
 Universidade Federal do Rio de Janeiro, UFRJ, Rio de Janeiro, Brazil  
 Pontifícia Universidade Católica do Rio de Janeiro, PUC-Rio, Rio de Janeiro, Brazil  
 Center for High Energy Physics, Tsinghua University, Beijing, China  
 School of Physics State Key Laboratory of Nuclear Physics and Technology, Peking University, Beijing, China  
 University of Chinese Academy of Sciences, Beijing, China  
 Institute Of High Energy Physics, IHEP, Beijing, China  
 South China Normal University, Guangzhou, China  
 School of Physics and Technology, Wuhan University, Wuhan, China  
 Institute of Particle Physics, Central China Normal University, Wuhan, Hubei, China  
 Departamento de Física, Universidad Nacional de Colombia, Bogota, Colombia  
 LAPP, Université de Savoie, CNRS/IN2P3, Annecy-Le-Vieux, France  
 Clermont Université, Université Blaise Pascal, CNRS/IN2P3, LPC, Clermont-Ferrand, France  
 CPPM, Aix-Marseille Université, CNRS/IN2P3, Marseille, France  
 LAL, Université Paris-Sud, CNRS/IN2P3, Orsay, France  
 LPNHE, Université Pierre et Marie Curie, Université Paris Diderot, CNRS/IN2P3, Paris, France  
 Fakultät Physik, Technische Universität Dortmund, Dortmund, Germany  
 Physikalisches Institut, Ruprecht-Karls-Universität Heidelberg, Heidelberg, Germany  
 Institut für Physik, Universität Rostock, Rostock, Germany  
 I. Physikalisches Institut, RWTH Aachen University, Aachen, Germany  
 School of Physics, University College Dublin, Dublin, Ireland  
 Sezione INFN di Bari, Bari, Italy  
 Sezione INFN di Bologna, Bologna, Italy  
 Sezione INFN di Cagliari, Cagliari, Italy  
 Sezione INFN di Ferrara, Ferrara, Italy  
 Sezione INFN di Firenze, Firenze, Italy  
 Laboratori Nazionali dell'INFN di Frascati, Frascati, Italy  
 Sezione INFN di Genova, Genova, Italy  
 Sezione INFN di Milano Bicocca, Milano, Italy  
 Sezione INFN di Milano, Milano, Italy  
 Sezione INFN di Padova, Padova, Italy  
 Sezione INFN di Pisa, Pisa, Italy  
 Sezione INFN di Roma Tor Vergata, Roma, Italy  
 Sezione INFN di Roma La Sapienza, Roma, Italy  
 Henryk Niewodniczanski Institute of Nuclear Physics Polish Academy of Sciences, Kraków, Poland

AGH - University of Science and Technology, Faculty of Physics and Applied Computer Science, Kraków, Poland  
National Center for Nuclear Research, NCBJ, Warsaw, Poland  
Horia Hulubei National Institute of Physics and Nuclear Engineering, Bucharest-Magurele, Romania  
Petersburg Nuclear Physics Institute, PNPI, Gatchina, Russia  
Institute of Theoretical and Experimental Physics, ITEP NRC KI, Moscow, Russia  
Institute of Nuclear Physics, Moscow State University, SINP MSU, Moscow, Russia  
Institute for Nuclear Research of the Russian Academy of Sciences, INR RAN, Moscow, Russia  
National Research Centre Kurchatov Institute, Moscow, Russia  
Budker Institute of Nuclear Physics, SB RAS and Novosibirsk State University, Novosibirsk, Russia  
Institute for High Energy Physics, IHEP NRC KI, Protvino, Russia  
Yandex School of Data Analysis, Moscow, Russia  
National University of Science and Technology "MISIS", Moscow, Russia  
National Research University Higher School of Economics, Moscow, Russia  
National Research Tomsk Polytechnic University, Tomsk, Russia  
Jozef Stefan Institute, Ljubljana, Slovenia  
ICCUB, Universitat de Barcelona, Barcelona, Spain  
IGFAE, Universidad de Santiago de Compostela, Santiago de Compostela, Spain  
Instituto de Fisica Corpuscular, IFIC, Universitat de Valencia-CSIC, Valencia, Spain  
European Organization for Nuclear Research, CERN, Geneva, Switzerland  
Ecole Polytechnique Fédérale de Lausanne, EPFL, Lausanne, Switzerland  
Physik-Institut, Universität Zürich, Zürich, Switzerland  
Nikhef National Institute for Subatomic Physics, Amsterdam, The Netherlands  
Nikhef National Institute for Subatomic Physics and VU University Amsterdam, Amsterdam, The Netherlands  
KVI - University of Groningen, Groningen, The Netherlands  
NSC Kharkiv Institute of Physics and Technology, NSC KIPT, Kharkiv, Ukraine  
Institute for Nuclear Research of the National Academy of Sciences, KINR, Kyiv, Ukraine  
University of Birmingham, Birmingham, UK  
H.H. Wills Physics Laboratory, University of Bristol, Bristol, UK  
Cavendish Laboratory, University of Cambridge, Cambridge, UK  
Department of Physics, University of Warwick, Coventry, UK  
STFC Rutherford Appleton Laboratory, Didcot, UK  
School of Physics and Astronomy, University of Edinburgh, Edinburgh, UK  
School of Physics and Astronomy, University of Glasgow, Glasgow, UK  
Oliver Lodge Laboratory, University of Liverpool, Liverpool, UK  
Imperial College London, London, UK  
School of Physics and Astronomy, University of Manchester, Manchester, UK  
Department of Physics, University of Oxford, Oxford, UK  
University of Michigan, Ann Arbor, United States  
Massachusetts Institute of Technology, Cambridge, MA, United States  
University of Cincinnati, Cincinnati, OH, United States  
University of Maryland, College Park, MD, United States  
Los Alamos National Laboratory, LANL, Los Alamos, United States  
Syracuse University, Syracuse, NY, United States

**Looking inside the molecular breakup with XUV-pump–XUV-probe transient-absorption spectroscopy:**

FLASH/DESY, Hamburg, Germany  
Department of Chemistry, UC Berkeley, Berkeley CA, USA  
Nanyang Technological University, Singapore  
ETH Zürich, Switzerland  
Theoretische Chemie, Universität Heidelberg, Germany

**Low Energy Storage Rings:**

National Institute of Radiological Sciences, Chiba, Japan  
University of Kyoto, Japan

**MATS:**

University of Brussels, Belgium  
University of Jyväskylä, Finland  
CNRS Orsay/Paris, France  
CENBG/IN2P3, Orsay, France  
Universität Greifswald, Germany  
Universität Erlangen, Germany  
GSI Darmstadt, Germany  
Universität Mainz, Germany  
Universität Gießen, Germany  
Universität München, Germany  
Variable Energy Cyclotron Centre Kolkata, India



Raniganj Girls' College, India  
St. Petersburg Nuclear Physics Institute, Russia  
St. Petersburg State University, Russia  
Universidad de Huelva, Spain  
University of Granada, Spain  
University of Valencia CSIC, Spain  
CIEMAT, Spain  
UPC, Spain  
Stockholm University, Sweden  
CERN Geneva, Switzerland  
Lawrence Livermore National Laboratory, USA  
Michigan State University, USA  
Louisiana State University, USA

**Molecular AttoClock:**

Kansas State University Manhattan, KS, USA

**Nuclear experiments in storage rings:**

Centre Etudes Nucleaires de Bordeaux Gradignan, France

**nuClock:**

Technische Universität Wien, Austria  
Physikalisch-Technische Bundesanstalt, Braunschweig, Germany  
Ludwig-Maximilians-Universität München, Germany  
MPI für Quantenoptik, Garching, Germany  
Ruprecht-Karls-Universität Heidelberg, Germany  
Jyvaskylan Yliopisto, Jyvaskyla, Finland  
Toptica Photonics AG, Gräfelfing, Germany

**NUSTAR:**

University of Leuven, Belgium  
Niels Bohr Institute Copenhagen, Denmark  
University of Jyväskylä, Finland  
IRES Strasbourg, France  
GANIL Caen, France  
CEA/Saclay Gif-sur-Yvette, France  
CSNS11 Orsay, France  
CNSM Orsay, France  
Universität Gießen, Germany  
GSI Darmstadt, Germany  
Forschungszentrum Jülich, Germany  
Universität Köln, Germany  
TU München Garching, Germany  
TU Darmstadt, Germany  
Hahn-Meitner-Institut Berlin, Germany  
Universität Greifswald, Germany  
Universität Tübingen, Germany  
Universität Mainz, Germany  
Forschungszentrum Karlsruhe, Germany  
Forschungszentrum Rossendorf, Germany  
INFN Padova, Italy  
INFN Legnaro, Italy  
Politecnico di Milano, Italy  
INFN Milano, Italy  
ENEA Bologna, Italy  
RCNP Osaka, Japan  
University of Tokyo, Japan  
RIKEN Wako, Japan  
Institute of Nuclear Physics Cracow, Poland  
University of Sevilla, Spain  
University of Huelva, Spain  
IFIC Valencia, Spain  
Kungliga Tekniska Högskolan Stockholm, Sweden  
Uppsala University, Sweden  
Lund University, Sweden  
Universität Basel, Switzerland  
CERN Geneva, Switzerland

University of Surrey Guildford, UK  
University of Manchester, UK  
University of Liverpool, UK  
CCLRC Daresbury Laboratory, UK  
Argonne National Laboratory, USA  
Los Alamos National Laboratory, USA  
Pacific Northwest National Laboratory Richland, USA  
University of Notre Dame, USA  
Oak Ridge National Laboratory, USA

**Optical clocks:**

Wuhan Institute of Physics and Mathematics CAS, Wuhan, China  
RIKEN, Fundamental Symmetries Laboratory, Saitama, Japan

**Phase shifts due to continuum couplings:**

University of Central Florida, Florida, USA  
Drake University, Iowa, USA

**Photocathodes for Cold Intense Electron Beams:**

Rzhanov Institute of Semiconductor Physics, RAS, Novosibirsk, Russia

**Pulsar wind hydrodynamics:**

MEPHI, Moscow, Russia  
Rikkyo University, Tokyo, Japan

**Pulsar Wind Nebulae (German Israeli Foundation):**

Ben Gurion University, Beer Sheva, Israel

**Radiative Emission from Trapped Polyatomic Molecules:**

Max-Planck-Institut für Astronomie, Germany  
Karlsruhe Institute of Technology, Germany

**SFB Isolated quantum systems and universality in extreme conditions:**

Heidelberg University, Germany

**SHIPTRAP:**

GSI Darmstadt, Germany  
TU Darmstadt, Germany  
Helmholtz-Institut Mainz, Germany  
Universität Mainz, Germany  
Universität Greifswald, Germany  
Universität Gießen, Germany  
St. Petersburg Nuclear Physics Institute Gatchina, Russia  
LMU München, Germany  
Universidad Granada, Spain

**Signatures and control of strong-field dynamics:**

Physikalisch-Chemisches Institut, Universität Heidelberg, Germany

**SPARC:**

Centro Atomico Bariloche, Argentina  
TU Wien, Austria  
TRIUMF National Laboratory Vancouver, Canada  
University of Manitoba Winnipeg, Canada  
York University Toronto, Canada  
Institute of Modern Physics, Chinese Academy of Sciences, China  
China Institute of Atomic Energy Beijing, China  
Institute of Applied Physics and Computational Mathematics Beijing, China  
Fudan University Shanghai, China  
Institute of Modern Physics Lanzhou, China  
Jilin University, China  
Lanzhou University, China  
University of Science and Technology of China Hefei, China  
Wuhan Institute of Physics and Mathematics, China  
Northwest Normal University Lanzhou, China  
Ruder Boskovic Institute Zagreb, Croatia  
Institute of Physics, Czech Academy of Sciences, Czech Republic  
University of Aarhus, Denmark  
Cairo University Beni-Suef, Egypt  
Institut des NanoSciences de Paris, France

Laboratoire Kastler-Brossel Paris, UPMC/ENS, France  
CIMAP Caen, France  
CIRIL-Ganil Caen, France  
Ecole Normale Supérieure Lyon, France  
Institut de Physique Nucléaire de Lyon, France  
Groupe de Physique des Solides Paris, France  
Deutsches Elektronen-Synchrotron DESY, Germany  
Humboldt-Universität Berlin, Germany  
Hahn-Meitner-Institut Berlin, Germany  
Universität Jena, Germany  
Universität Greifswald, Germany  
Forschungszentrum Jülich, Germany  
Universität Freiburg, Germany  
GSI Darmstadt, Germany  
Universität Gießen, Germany  
TU München, Germany  
LMU München, Germany  
TU Dresden, Germany  
Universität Tübingen, Germany  
Universität Frankfurt am Main, Germany  
Universität Mainz, Germany  
Universität Kassel, Germany  
TU Clausthal, (Germany  
Universität Heidelberg, Germany  
TU Darmstadt, Germany  
PTB Braunschweig, Germany  
Universität Erlangen, Germany  
University of Crete and IESL-FORTH Heraklion, Greece  
Institute of Nuclear Research Debrecen, Hungary  
Tata Institute of Fundamental Research Mumbai, India  
Vaish College Rohtak, India  
Nuclear Science Centre New Delhi, India  
Bhabha Atomic Research Centre Mumbai, India  
INFN Catania, Italy  
University of Tokyo, Japan  
RIKEN Wako, Japan  
Hashemite University Zarqa, Jordan  
Universidad Nacional Autónoma de México Cuernavaca, Mexico  
Reijksuniversiteit Groningen, The Netherlands  
B Z University Multan, Pakistan  
Instituto Peruano de Energía Nuclear, Peru  
Swietokryska Academy Kielco, Poland  
Jagellonian University Cracow, Poland  
Warsaw University, Poland  
Institute of Nuclear Physics of Polish Academy of Sciences Cracow, Poland  
The Soltan Institute for Nuclear Studies Swierk, Poland  
Universidade de Lisboa, Portugal  
National Institute for Laser, Plasma & Radiation Physics, Romania  
Institute for Space Sciences – INFLPR, Romania  
National Institute for Physics and Nuclear Engineering Bucharest, Romania  
RRC “Kurchatov Institute”, Russia  
Petersburg Nuclear Physics Institute, Russia  
Lebedev Physical Institute Moscow, Russia  
St. Petersburg State University, Russia  
Institute of Metrology for Time and Space Mendeleev, Russia  
Institute of Spectroscopy of the RAS Troitsk, Russia  
Moscow State University, Russia  
V.G. Khlopin Radium Institute St. Petersburg, Russia  
Institute of Physics Belgrade, Serbia and Montenegro  
UNED – Universidad a Distancia, Spain  
CIMAT, Spain  
Hospital Universitario La Paz, Spain  
University of Madrid, Spain  
CSIC Madrid, Spain  
Chalmers University of Technology and Göteborg University, Sweden  
Stockholm University, Sweden

Mid-Sweden University Sundsvall, Sweden  
Lund University, Sweden  
Manne Siegbahn Laboratory Stockholm, Sweden  
CERN Geneva, Switzerland  
University of Fribourg, Switzerland  
Universität Basel, Switzerland  
Queen's University Belfast, UK  
University of Durham, UK  
Old Dominion University, USA  
East Carolina University, USA  
Lawrence Livermore National Laboratory, USA  
Kansas State University, USA  
Lawrence Berkeley National Laboratory, USA  
Georgia State University Atlanta, USA  
University of Missouri Rolla, USA  
Oak Ridge National Laboratory, USA  
Western Michigan University Kalamazoo, USA  
Harvard-Smithsonian Center for Astrophysics Cambridge, USA  
Brown University Providence, USA  
University of Texas Austin, USA  
Columbia University New York, USA  
Heat Physics Department of the Uzbek Academy of Sciences, Uzbekistan

**Spectroscopy of highly charged ions for EUV nanolithography:**

Advanced Research Center for Nanolithography, EUV Plasma Processes, Amsterdam, The Netherlands

**Spectroscopy of pure and doped He-droplets:**

University of Freiburg, Germany  
Aarhus University, Denmark  
IITM Madras, India

**Stereo:**

IRFU, CEA, Université Paris-Saclay, Gif-sur-Yvette, France  
Institut Laue-Langevin, Grenoble, France  
Univ. Grenoble Alpes, Université Savoie Mont Blanc, CNRS/IN2P3, LAPP, Annecy, France  
Univ. Grenoble Alpes, CNRS, Grenoble INP, LPSC-IN2P3, Grenoble, France

**SWG0:**

Instituto de Astronomía y Física del Espacio, IAFE, CONICET-UBA, Buenos Aires, Argentina  
DPC-CAB, Grupo Atómico Bariloche, Argentina  
Facultad de Ciencias Exactas - Universidad Nacional de Salta, Argentina  
CBPF, Centro Brasileiro de Pesquisas Físicas, Rio de Janeiro, Brazil  
IFSC, Instituto de Física de São Carlos, Universidade de São Paulo, São Carlos, Brazil  
IFF, Instituto Federal de Educação, Ciência e Tecnologia Fluminense, Rio de Janeiro, Brazil  
FZU, Institute of Physics of the Czech Academy of Sciences, Prague, Czech Republic  
ECAP, Erlangen Centre for Astroparticle Physics - Universität Erlangen-Nürnberg, Erlangen, Germany  
RWTH, Aachen, Germany  
Dipartimento di Fisica, Università degli studi di Torino, Italy  
Università di Padova, Dipartimento di Fisica e Astronomia & INFN Padova, Italy  
Dipartimento di Fisica e Astronomia "E. Majorana", Università di Catania, Italy  
Dipartimento di Fisica, Università di Trieste, Italy  
Politecnico di Milano, Italy  
Università IUAV di Venezia, Italy  
Università degli Studi di Roma "Tor Vergata" - Dipartimento di Fisica, Italy  
Università di Udine, Italy  
Università di Perugia, Italy  
Università di Siena, Italy  
Dipartimento Interateneo di Fisica dell'Università e del Politecnico di Bari, Italy  
INAF, Istituto Nazionale di Astrofisica, Italy  
IF-UNAM, Instituto de Física, Universidad Nacional Autónoma de México, Mexico City, Mexico  
IA-UNAM, Instituto de Astronomía, Mexico City, Mexico  
ICN-UNAM, Instituto de Ciencias Nucleares, Mexico City, Mexico  
IGEF-UNAM, Instituto de Geofísica, Mexico City, Mexico  
INAOE, Instituto Nacional de Astrofísica Óptica y Electrónica, Puebla, Mexico  
Facultad de Ciencias en Física y Matemáticas UNACH, Chiapas, Mexico  
Benemérita Universidad Autónoma de Puebla, Mexico  
Universidad de Guadalajara, Mexico

Universidad Michoacana de San Nicolas de Hidalgo, Mexico  
Centro de Investigación en Computación, Instituto Politécnico Nacional, Mexico  
UAEH, Universidad Autónoma del Estado de Hidalgo, Mexico  
UPP, Universidad Politécnica de Pachuca, Mexico  
LIP, Laboratório de Instrumentação e Física Experimental de Partículas, Lisboa, Portugal  
Durham University, Durham, United Kingdom  
University Leicester, United Kingdom  
University Liverpool, United Kingdom  
University of Oxford, United Kingdom  
Michigan Technological University, Houghten-MI, United States of America  
LNL, Los Alamos National Lab, Los Alamos-NM, United States of America  
UMD, University of Maryland, College Park,-MD, United States of America  
WIPAC, Wisconsin IceCube Particle Astrophysics Center, UW-Madison, United States of America

**Time-resolved Four-Wave-Mixing Spectroscopy for Inner-Valence Transitions:**

Centre for Theoretical Atomic, Molecular and Optical Physics, Queen's University Belfast, United Kingdom

**VHE Gamma-Ray Sources:**

University of Adelaide, Australia

**XENON Collaboration:**

Laboratori Nazionali del Gran Sasso, Italy  
University of Bologna and INFN-Bologna, Italy  
Columbia University, USA  
University of Coimbra, Portugal  
Rice University, USA  
Johannes Gutenberg Universität Mainz, Germany  
Wilhelms-Universität Münster, Germany  
Nikhef and the University of Amsterdam, Netherlands  
NYUAD, Abu Dhabi  
Purdue University, USA  
SUBATECH, France  
LPNHE, France  
LAL, France  
University of Torino and INFN-Torino, Italy  
University of Napoli and INFN-Napoli, Italy  
Weizmann Institute of Science, Israel  
University of Zurich, Switzerland  
University of Freiburg, Germany  
Rensselaer Polytechnic Institute, USA  
University of Chicago, USA  
University of California, San Diego, USA  
Stockholm University, Sweden  
Kobe University, Japan  
Nagoya University, Japan  
University of Tokyo, Japan  
Karlsruhe institute of technology, Germany

**X-ray laboratory astrophysics with free-electron lasers and synchrotron radiation:**

Lawrence Livermore National Laboratory, Livermore, USA  
NASA Goddard Space Flight Center, USA  
UNIST, School of Natural Science – Physics, Ulsan, South Korea  
Institute of Space and Astronautical Science, Tokyo, Japan  
IRAP Research Institute in Astrophysics and Planetology, Toulouse, France  
RIKEN Nishina Center, High Energy Astrophysics Laboratory, Saitama, Japan  
Universidade Nova de Lisboa, Caparica, Portugal