
Experimental techniques in astroparticle physics I

WS 2019

Lecturers: Loredana Gastaldo and Teresa Marrodán Undagoitia

Lecture: Wednesdays, 9 : 15 – 11 : 00 h at Philos.-weg 12, Room 059

Exercises: Fridays, 14 : 00 – 16 : 00 h at INF 227 / SR 1.403

2 SWS lecture + 2 SWS exercises

Topics WS2019:

1. Lecture: Cosmic rays introduction
2. Lecture: Cosmic rays: γ -ray detection
3. Lecture: Cosmic rays: X-ray astronomy
4. Lecture: Cosmic rays: detection of charged particles
5. Lecture: Introduction to neutrinos and their oscillations
6. Lecture: Solar neutrinos
7. Lecture: Supernova neutrinos and their detection
8. Lecture: High energy neutrinos: atmospheric and from distant sources
9. Lecture: Cosmic microwave background
10. Lecture: Gravitational waves

Literature:

1. E. W. Kolb and M. S. Turner, *'The Early Universe'*, Front. Phys. 69 (1990) 1
2. H. V. Klapdor-Kleingrothaus and K. Zuber, *Particle Astrophysics*, IoP (2000)
3. D. H. Perkins, *Particle Astrophysics*, Oxford Master Series in Physics, Oxford University Press (2009)