
Dark matter

Lecturers: Teresa Marrodán Undagoitia and Giorgio Arcadi

Lecture: Wednesday 9.15 h - 11.00 h at Philos.-weg 12 / kHS

Exercises: by Florian Jörg on Thursday 9.15 h - 11.00 h at Philos.-weg 12 / kHS

Topics:

1. Astronomical and cosmological indications
2. History of the Universe
3. Dark matter explanations and candidates
4. WIMP dark matter
5. Dark matter distribution
6. Direct detection
7. WIMP models
8. Sterile neutrinos as dark matter
9. Axion dark matter
10. Indirect detection
11. Collider searches

Literature:

1. E. W. Kolb and M. S. Turner, *'The Early Universe'*, Front. Phys. 69 (1990) 1
2. Ed. by G. Bertone, *'Particle dark matter'*, Cambridge University Press (2010)
3. Y. Mambrini, *'Histories of dark matter in the Universe'*,
http://www.ymambrini.com/My_World/Physics_files/Universe.pdf
4. H. V. Klapdor-Kleingrothaus and K. Zuber, *Particle Astrophysics*, IoP (2000)