UNIVERSITÀ degli STUDI di CATANIA

DIPARTIMENTO DI FISICA E ASTRONOMIA

DOTTORATO DI RICERCA IN FISICA

CICLO XXXIV
A. A. 2018 - 2019

Experimental searches for Dark Matter

2 CFU

Teaching staff
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Program of the course:

- Observational evidence for Dark Matter
- Introduction to Dark Matter candidates
- Thermal production in the standard cosmology
- Direct detection of WIMPs: principles, detectors and experimental techniques
- Dark Matter searches at colliders and fixed target experiments
- Dark Photon: introduction to the Dark Photon model and experimental techniques for the “visible decay” search
- Search for invisible decays of Dark Photons: missing mass and missing momentum experiments
- Beam-dump experiments for light Dark Matter search with proton and electron beams

Bibliography:

- G. Bertone, Particle Dark Matter: Observations, Models and Searches Cambridge University Press 2010
- US Cosmic Visions: New Ideas in Dark Matter 2017, arXiv:1707.04591