

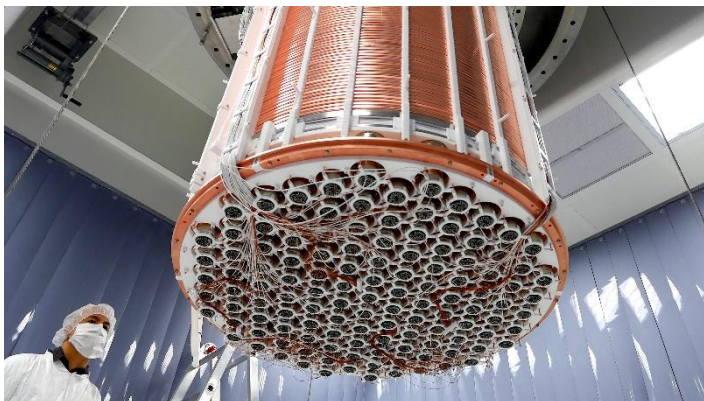
Dr. Yanina Biondi

KIT (Institute of Astroparticle Physics)

From dark matter to neutrinos: how Earth-based experiments can unveil well-kept secrets of NatureThursday, May 22, 2025, at 2.00 p.m. **c. t.**

Building C6.4, Lecture Hall II (00.9)

The standard model of particle physics has proven to be a robust machinery in describing processes involving the smallest components of our Universe. Despite its success, unanswered questions remain: What is the mechanism for neutrinos to acquire mass? Why is Charge-Parity symmetry highly conserved in QCD? What is the reason for the particle-antiparticle asymmetry in the Universe? And what is really dark matter? Extremely sensitive detectors placed deep underground, such as dual-phase liquid xenon time projection chambers, can aid to answer these questions. In particular, the XLZD Observatory is a planned 80-tonne liquid xenon time projection chamber, to be built approximately in 2030, with high sensitivity to a plethora of rare interactions of matter. Low background terrestrial experiments are complementary to searches in accelerators, in an exciting research field that spans particle physics, astrophysics, nuclear physics, and material science.



© Amadeus Bramsiepe

You can participate online via MS Teams: <https://tinyurl.com/Biondi22-05>

Interested people are cordially invited.

Coffee and cookies are served at 2.00 p.m. in front of the Lecture Hall