

An overview of directional dark matter experiments: current status and future prospects

Wednesday, 21 June 2017 14:30 (30 minutes)

The WIMP direction at Earth undergoes a diurnal modulation that, if detected, would provide one of the most powerful and unambiguous signatures for discovery of Galactic dark matter. The number of experiments aimed at detecting this signature have greatly expanded in the last decade. Besides traditional technologies used to measure tracks of WIMP induced nuclear recoils in the detector, a number of other ideas are also being pursued that detect this signature more indirectly. After a brief review of the directional signature we will provide the current status of the more mature experiments, such as those based on low-pressure gas time projection chambers. We will conclude with a summary of the new technologies that are in various stages of development.

Primary author: Prof. LOOMBA, Dinesh (University of New Mexico)

Presenter: Prof. LOOMBA, Dinesh (University of New Mexico)

Session Classification: Working Group: Astroparticle physics and cosmology

Track Classification: Astroparticle Physics and Cosmology Working Group