



Contribution ID: 28

Type: **Invited Talk**

The MoEDAL Experiment - Voyaging Beyond the Standard Model

Monday 26 November 2018 16:50 (25 minutes)

MoEDAL, is a pioneering LHC experiment designed to search for anomalously ionizing messengers of new physics such as magnetic monopoles or massive (pseudo-)stable charged particles, that are predicted to exist in a plethora of models beyond the Standard Model. It started data taking at the LHC at a centre-of-mass energy of 13 TeV, in 2015. Its groundbreaking physics program defines a number of scenarios that yield potentially revolutionary insights into such foundational questions as: are there extra dimensions or new symmetries; what is the mechanism for the generation of mass; does magnetic charge exist; and what is the nature of dark matter. MoEDAL purpose is to meet such far-reaching challenges at the frontier of the field. We will present the results from the MoEDAL detector on Magnetic Monopole and highly ionizing electrically charged particle production that are the world's best. Finally, progress on the installation of MoEDAL's MAPP (MoEDAL Apparatus for the detection of Penetrating Particles) sub-detector prototype and the planning for MALL (MoEDAL Apparatus for detecting ultra Long-Lived particles) will be briefly discussed.

Content of the contribution

Both

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