

MoEDAL –A New Experiment at the LHC’s Discovery Frontier

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MoEDAL is a pioneering experiment designed to search for highly ionizing messengers of new physics such as magnetic monopoles or massive (pseudo-)stable charged particles. Its ground-breaking 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; what is the nature of dark matter; and, how did the big-bang develop at the earliest times. MoEDAL’s purpose is to meet such far-reaching challenges at the frontier of the field. The physics reach of the existing MoEDAL detector is discussed along with the physics possibilities of SLAC type millicharged particle “beam dump” type MoEDAL sub-detector. I will also briefly describe MoEDAL’s innovative and unconventional detector methodologies tuned to the prospect of discovery physics. Finally, the first results will be presented.

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