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The MoEDAL-MAPP Experiment - Extending the Physics Reach of the LHC

Monday, 5 July 2021 18:27 (23 minutes)

MoEDAL-MAPP is a pioneering experiment designed to search for highly ionizing (HIP), feebly interacting (mQP) and long-lived particle (LLP) avatars of new physics in p-p and heavy-ions collisions at the LHC. The MoEDAL baseline detector first took data at LHC's Run-2. This detector was dedicated to the search for HIPs, such as magnetic monopoles or massive (pseudo-)stable charged particles, that are predicted to exist in a plethora of models beyond the Standard Model. The MoEDAL-MAPP experiment, including the MALL detector, is designed to extend the search for new physics to include mQPs and LLPs for LHC's Run-3. MoEDAL's 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. The current results from Run-2, the status of the MoEDAL-MAPP detector for Run-3 and the physics program for Run-3, will be discussed.

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Session Classification: Interacting Dark Matter

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