Contribution ID: **33**   Type: **not specified**

The MoEDAL- MAPP Facility for the LHC Program

Monday, 4 September 2023 17:10 (20 minutes)

The MoEDAL detector, deployed at IP8 in 2010, was the LHC's first dedicated search experiment. MoEDAL is designed to detect Highly Ionizing Particle avatars of BSM physics without requiring a restrictive trigger. MoEDAL's MAPP-1 (MoEDAL Apparatus for Penetrating Particles) is currently being installed in UA83 adjacent to IP8 on the LHC ring MAPP-1's purpose is to extend the reach of the MoEDAL experiment to include sensitivity to Feebly Ionizing Particles (FIPs) such as milli-charged particles. MAPP-1 combined with MoEDAL trapping detectors also has an unprecedented sensitivity to extremely long-lived massive charged particles. Additionally, MAPP-1 has some sensitivity to very long-lived neutral particles. The LHCC has also endorsed MoEDAL's NoI to install the MAPP-2 detector for data taking at the High Luminosity LHC. MAPP-2 will greatly extend MoEDAL-MAPP's reach in the search for LLPs. The reach of MAPP-2 is complementary to other planned LLP detectors and the existing LHC general-purpose detectors. In this talk, the MoEDAL-MAPP project for the LHC that includes competitive sensitivity to HIP, FIPs and LLPs, without relying on hardware triggers, will be described.

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Session Classification: A1