



Canadian Association
of Physicists

Association canadienne
des physiciens et physiciennes

Contribution ID: 3008

Type: **Invited Speaker / Conférencier(ère) invité(e)**

(I) The MoEDAL-MAPP Experiment –The Upgrade of the LHC’s 1st Dedicated Search Experiment for LHC’s Run-3 and Beyond

Tuesday, 7 June 2022 11:00 (25 minutes)

The MoEDAL experiment deployed at IP8 on the LHC ring was the first dedicated search experiment to take data at the LHC in 2010. It was designed to search for Highly Ionizing Particle (HIP) avatars of new physics such as magnetic monopoles, dyons, Q-balls, multiply charged particles, massive slowly moving charged particles and long-lived massive charge SUSY particles. An upgrade to MoEDAL, the MoEDAL Apparatus for Penetrating Particles (MAPP), approved by CERN’s Research Board in now the LHC’s newest detector. The MAPP detector, positioned in UA83, expands the physics reach of MoEDAL to include sensitivity to milli-charged particles with charge as low as $10^{-3} e$ (where e is the electron charge) and, in conjunction with MoEDAL’s trapping detector, to extremely long-lived charged particles. MAPP also has some sensitivity to long-lived neutral particles. We shall also briefly discuss the MAPP-2 upgrade to the MoEDAL-MAPP experiment planned for the High Luminosity LHC (HL-LHC) in the UG1 gallery near to IP8. This phase of the experiment is designed to maximize the MoEDAL-MAPP sensitivity to long-lived neutral messengers of physics beyond the Standard Model.

Primary author: PINFOLD, James (University of Alberta (CA))

Presenter: PINFOLD, James (University of Alberta (CA))

Session Classification: T2-3 New Directions in Accelerator-Based Experiments: Future Collider Experiments - Energy and Precision Frontier (PPD) | Nouvelles voies fondées sur des accélérateurs: expériences futures avec collisionneurs - frontière d’énergie et de précision (PPD)

Track Classification: Symposia Day (Tues. June 7) / Journée de symposiums (mardi, le 7 juin): Symposia Day (PPD) - New Directions in Accelerator-Based Experiments