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Long-lived particle searches at MoEDAL

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We present a study of searching for massive long-lived particles at the MoEDAL detector. MoEDAL is sensitive to highly ionizing avatar such as magnetic monopoles or massive (meta-)stable charged particles and we focus on the latter in this talk. In the ATLAS and CMS analyses for long-lived particles, some conditions are usually required for triggering or reducing the cosmic ray background, whereas those conditions are not necessary at MoEDAL, due to its extremely low background.

On the other hand, MoEDAL requires the particle to have low velocities (e.g., $\beta < 0.2$ for the particles with unit charge), which result in small signal cross-sections. Using Monte Carlo simulations, we compare MoEDAL vs ATLAS/CMS sensitivities for various long-lived particles in supersymmetric models, and seek for a scenario where MoEDAL is complementary to ATLAS and CMS.

This contribution is based on an upcoming article.

Parallel Session

Supersymmetry: Models, Phenomenology and Experimental Results

Author: Dr SAKURAI, Kazuki (University of Warsaw)

Co-authors: Dr MITSOU, Vasiliki (Univ. of Valencia and CSIC (ES)); VIVES GARCIA, Oscar Manuel (Univ. of Valencia and CSIC (ES)); RUIZ DE AUSTRI, Roberto; MAMUZIC, Judita (IFIC Valencia); SANTRA, Arka (Univ. of Valencia and CSIC (ES))

Presenter: Dr SAKURAI, Kazuki (University of Warsaw)

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