

SYNERGIES TOWARDS THE FUTURE STANDARD MODEL

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Inelastic Dark Matter at ProtoDUNE

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Liquid argon Time Projection Chambers (LArTPCs) have proven to be powerful instruments for detecting weakly interacting particles predicted by many beyond the Standard Model (BSM) scenarios. Thanks to their location at CERN, the ProtoDUNE detectors can intercept a sizeable flux of such particles, produced when the 400 GeV protons from the Super Proton Synchrotron (SPS) impinge on a fixed target. In this talk, I will focus on the inelastic dark matter (iDM) model and search for its dark photon mediator in ProtoDUNE. I will outline the projected sensitivity reach for its mixing parameter, ε , and its mass, $m_{A'}$.

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