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Heavy Neutral Particle Search in MINERvA DYSON T KENNEDY, University of Rochester, MINERVA COLLABORATION — The MINERvA experiment observes neutrino interactions from the most intense neutrino beam in the world (NuMI). If a rarely interacting neutral particle with a mass on the order of 100 MeV were to be produced in the beam, it would arrive in the detector much later than the ultra-relativistic neutrinos and might deposit energy noticeably higher than other expected sources of late-in-time energy in the detector. We describe efforts to understand and eliminate the backgrounds in the MINERvA data outside the beam gate in order to search for signals that fit this description. Such a particle is not predicted by the Standard Model and thus this search could help direct the future extensions of the Standard Model.

Dyson T Kennedy
University of Rochester

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