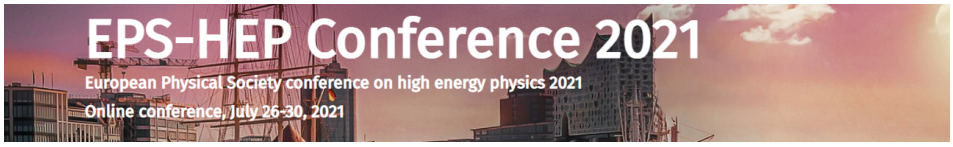

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GeV-scale neutrinos at DUNE

The simplest extension to account for neutrino masses requires the addition of heavy right-handed neutrinos. If these heavy neutrinos have masses up to the GeV escale, they could be produced via mixing at beam-dump experiments in leptonic and semileptonic meson decays. These long lived particles could eventually arrive and decay in the volume of the detector. In this talk, the capability of the DUNE near detector (ND) to look for these heavy neutral leptons is explored. First, the effective operators describing interactions of light mesons and one heavy neutrino will be reviewed. This effective Lagrangian is implemented in a FeynRules model file which is made publicly available so that fully differential event distributions can be simulated. Then, by computing the flux of heavy neutrinos at the ND, we show that DUNE will be able to explore large regions of the allowed parameter space which could explain neutrino masses, through a type-I Seesaw.

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