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TALK: Probing Heavy Neutral Lepton on Muon Collider and Beamdump Experiments

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Broad classes of solutions to the neutrino puzzles can be best tested by seeking the partners of SM light neutrinos, dubbed as heavy neutral leptons (HNLs). It can be parameterized by the HNL mass m_N and the mixing angle U_1 with the SM neutrino. In this talk, I will mainly discuss about probing two parameter space regime. One is for HNL mass larger than $O(100)$ GeV which can be tested at future high energy muon collider. Alternatively, if the HNL is lighter than the muon, it can be produced by the decays of muons and pions. The LSND experiment and the future beam dump experiment such as PIP2-BD can be exploited to improve the sensitivity.

Presenter: LYU, Kunfeng (University of Minnesota)