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Prospects for rare neutrino physics at the intensity frontier (student talk)

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Upcoming and ongoing neutrino experiments at the intensity frontier offer an unprecedented combination of high luminosity neutrino beams and state of the art detector technology. These include Fermilab's Short Baseline Neutrino Program (SBN) and Deep Underground Neutrino Experiment (DUNE), and CERN's Search for Hidden Particles (SHiP). The powerful combination of large signals and high quality detectors allows for the observation and discrimination of previously unseen neutrino physics, both within and beyond the Standard Model. In this talk I will focus on two signals: oppositely charged pairs of leptons, and single photons. In the case of charged leptons, I will describe how new detector technology enables the observation of, as of yet, unobserved Standard Model physics arising from neutrino trident production. I will then explain how these processes allow for the study of new particles beyond the Standard Model. Next I will explain how single photons can arise from beyond the Standard Model heavy neutral leptons, and present a phenomenological survey of a minimal model.

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