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MiniBooNE Results and the future of Sterile Neutrino Searches

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There exists a need to address and resolve the growing evidence for short-baseline neutrino oscillations and the possible existence of sterile neutrinos. Such non-standard particles were first invoked to explain the LSND anti- ν_μ to anti- ν_e appearance signal. A follow up experiment, MiniBooNE, has observed a 3.8σ excess of events in the 200-1250 MeV oscillation energy range that is consistent with the LSND signal. In addition, lower than expected neutrino induced event rates using calibrated radioactive sources and nuclear reactors can also be explained by the existence of sterile neutrinos. This talk will introduce the motivation for $\sim 1 \text{ eV}/c^2$ mass sterile neutrinos, discuss latest search results, and short-term and long-term plans to hunt for this mysterious particle.