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## Searching for Sterile Neutrinos at J-PARC with JSNS<sup>2</sup>

*Thursday 10 August 2017 17:00 (15 minutes)*

The J-PARC Sterile Neutrino Search at the J-PARC Spallation Neutron Source (JSNS<sup>2</sup>) will search for neutrino oscillations with  $\Delta m^2 \sim 1 \text{ eV}^2$  at the J-PARC Material and Life Science Experimental Facility (MLF). The experiment will perform a search for  $\bar{\nu}_\mu \rightarrow \bar{\nu}_e$  oscillations over a 24 m baseline using muon decay at rest neutrinos originating from 3 GeV proton interactions with a mercury target. Using two tanks of Gd-doped liquid scintillator with a total fiducial mass of 50 tons, JSNS<sup>2</sup> will exploit the unique signature of inverse beta decay (prompt positron signal, delayed gammas from neutron capture) to look for  $\bar{\nu}_e$  appearance. Additionally, JSNS<sup>2</sup> will do novel cross section measurements using 236 MeV muon neutrinos from kaon decay at rest (KDAR).

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