Contribution ID: **931** Type: **Parallel Talk**

Searching for a Sterile Neutrino at J-PARC MLF: JSNSˆ2 experiment

Friday, 7 July 2017 10:45 (15 minutes)

The JSNS² experiment aims to search for the existence of neutrino oscillations with Delta m² near 1eV² at the J-PARC Materials and Life Science Experimental Facility (MLF). With the 1 MW of 3 GeV proton beam created by Rapid Cycling Synchrotron (RCS) and spallation neutron target, an intense neutrino beam from muon decay at rest is available. Neutrinos come predominantly from mu⁺ decay : mu⁺ –> e⁺ + numubar + nue.
The oscillation to be searched for is numubar to nuebar which is detected by the inverse beta decay interaction nuebar + p –> e⁺ + n, followed by gammas from neutron capture of Gd.
The two detectors with a fiducial volume of 50 tons are located 24 meters away from the mercury target.

Additional physics programs include the cross section measurements with neutrinos with a few 10 MeV from muon decay at rest and with monochromatic 236MeV from kaon decay at rest..

Experimental Collaboration

JSNSˆ2 (J-PARC E56) experiment

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