

LNGS SEMINAR SERIES

Stefania Bordoni

IFAE Barcelona

Neutrino oscillation measurements at T2K

The T2K (Tokai-to-Kamioka) experiment is a long-baseline oscillation experiment situated in Japan. A high intensity muon neutrino beam is sent from the JPARC proton accelerator complex in Tokai to the SuperKamiokande detector, 295 km away.

The T2K collaboration has recently firmly established the observation of the appearance of electron neutrinos from a muon neutrino beam with a significance of 7.3σ . Furthermore T2K has become the world leading experiment concerning the measurement of the mixing angle ϑ_{23} and set the first exclusion limits at 90% CL on the still unknown parameter Δ_{CP} .

To further enhance its physics potential, T2K has started in 2014 to collect data in antineutrino mode. The first results on muon anti-neutrino disappearance have been presented for the first time few weeks ago and they look promising.

In this seminar I will present the T2K experiment and its recent results. To give a complete overview of the complexity of the experiment, I will review the complementary measurements needed to achieve the oscillation measurements.

JULY 2, 2015 – 2:30 PM
LNGS - "E. MAJORANA" ROOM