

More results from the OPERA experiment

Tuesday, July 25, 2017 5:30 PM (15 minutes)

The OPERA experiment reached its main goal by proving the appearance of tau-neutrinos in the CNGS muon neutrino beam. A total sample of 5 candidates fulfilling the analysis defined in the proposal was detected with a S/B ratio of about ten allowing to reject the null hypothesis at 5.1 sigma. The search has been extended to nu_tau-like interactions failing the kinematical analysis defined in the experiment proposal to obtain a statistically enhanced, lower purity, signal sample. One such interesting neutrino interaction with a double vertex topology will be reported with a high probability of being a nu_tau interaction with charm production. Based on the enlarged data sample the estimation of Δm^2_{23} in appearance mode is presented. The search for nu_e interactions has been extended over the full data set with a more than twofold increase in statistics with respect to published data. The analysis of the nu_mu->nu_e channel is updated and the implications of the electron neutrino sample in the framework of the 3+1 sterile model is discussed. An analysis of nu_mu -> nu_tau interactions in the framework of the sterile neutrino model has also been performed.

Presenter: MAURI, Nicoletta

Session Classification: Neutrino Parallel

Track Classification: Neutrinos