

Status of the OPERA experiment

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The OPERA experiment is a long baseline neutrino experiment aiming at the first observation of the appearance of a new flavor signal predicted by the neutrino flavor-mixing oscillations hypothesis. The OPERA is designed to detect a tau neutrino appearance in the pure muon neutrino beam from CERN to Gran Sasso (CNGS beam). The target has a modular structure made of units based on Emulsion Cloud Chamber (ECC) technique. ECC is sequence of the nuclear emulsion films interleaved with 1mm-thickness lead plates. Nuclear emulsion films are used as a tracking device with micrometric accuracy for the detection of tau decays. The ECC allows also to perform the kinematical measurements such as the momentum measurement by multiple scattering detection and the electron shower detection. Total target mass of 1.25kton was assembled by more than 150,000 units.

Since 2008 the OPERA experiment has started full data taking in the CNGS beam. Around 1,700 interactions in the detector have been collected in 2008 and the 2009 run is ongoing.

The status of the analysis and some fruitful outcome will be presented. The prospect of the future runs is also to be presented.

Primary author: ARIGA, Akitaka

Presenter: ARIGA, Akitaka

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