

XXX-th International Workshop on High Energy Physics “Particle and
Astroparticle Physics, Gravitation and Cosmology: Predictions, Observations
and New Projects”



Contribution ID: 46

Type: **Presentation**

Recent results from OPERA: search for $\nu_{\mu} \rightarrow \nu_{\tau}$ oscillations

Thursday, 26 June 2014 16:35 (20 minutes)

The OPERA experiment aims at providing a direct proof of the $\nu_{\mu} \rightarrow \nu_{\tau}$ oscillations by observing ν_{τ} CC interactions in an almost pure ν_{μ} accelerator beam, the CNGS (CERN Neutrinos to Gran Sasso).

The beam exposure started in 2008 and ended in 2012. Events recorded in the Emulsion Cloud Chamber detectors, made of lead plates and nuclear emulsions, are being analysed since 2008.

In the last period, a large additional amount of data has been extracted, leading to the validation of a 4th ν_{τ} candidate event. This new result brings the observation of the oscillation to a significance exceeding 4 sigma.

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Session Classification: Neutrino physics