Contribution ID: **189** Type: **Oral**

Reactor Rate Modulation Analysis in Double Chooz

Monday, 9 September 2013 17:00 (20 minutes)

Among ongoing reactor-based experiments, Double Chooz is unique in obtaining data when the reactor cores are brought down for maintenance. These reactor-off data allow for a clean measurement of the backgrounds of the experiment, thus being of uppermost importance for the theta_13 oscillation analysis. While the oscillation results published by the collaboration in 2011 and 2012 rely on background models derived from reactor-on data, in this poster we present an independent study based on the handle provided by 7.53 days of reactor-off data. A global fit to both theta_13 and the total background is performed by analyzing the observed neutrino rate as a function of the non-oscillated expected rate for different reactor power conditions. The results presented in this work is fully consistent with the ones already published by Double Chooz, for both Gd and H capture analyses. As they yield almost the same precision, this work stands as a prove of the reliability of the background estimates and the oscillation analysis of the experiment.

Primary author: NOVELLA, Pau (CNRS)

Presenter: NOVELLA, Pau (CNRS)

Session Classification: Neutrino Oscillations/ Neutrino Beams I

Track Classification: Neutrino Oscillations/ Neutrino Beam Physics