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Double Chooz latest results

Thursday, 12 September 2013 14:20 (20 minutes)

In this talk we present an update on the results of theDouble Chooz detector. This experiment searches for themixing angle, θ_{13}, in the three-neutrino mixing matrix
via the disappearance of $\bar{\nu}_e$ produced by the dual 4.27 GWth Chooz B Reactors. We will show an update oscillation fit results using both the rate and the shape of the anti-neutrino energy spectrum. In the oscillation analysis we will include data with neutron capture on Gadolinium and Hydrogen and we will present the independent Reactor Rate Modulation (RRM) measurement of θ_{13} and the agreement with the rate+shape results. This is an important step in our multi-years program to establish the value of θ_{13}. We will also give an update on the construction of the Double Chooz Near Detector and projections of Double Chooz's future experimental sensitivity to measure $\sin^2 2\theta_{13}$-driven oscillations.

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