38th INTERNATIONAL CONFERENCE
ON HIGH ENERGY PHYSICS
AUGUST 3 - 10, 2016
CHICAGO

Contribution ID: **536** Type: **Poster**

Measurement of theta13 using RENO reactor neutrino events with neutron capture on hydrogen

Monday 8 August 2016 18:30 (2 hours)

RENO has been taking data since August, 2011 and successfully measured the smallest neutrino mixing angle, theta13. This measurement was based on observed reactor neutrino events with neutron captures on gadolinium (n-Gd) in the target detector region. RENO also successfully measures the mixing angle from a reactor neutrino sample with neutron captures on hydrogen (n-H) in the gamma-catcher region. Due to a large accidental background in the n-H data sample, the analysis requires additional reduction of backgrounds . This independent measurement provides a valuable systematic cross-check of the theta13 measurement using the n-Gd sample. In this talk, we present the results from the n-H analysis using the 500 days of data sample.

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Session Classification: Poster Session

Track Classification: Neutrino Physics