

Measurement of the neutrino rates in the STEREO experiment

STEREO addresses the light sterile neutrino hypothesis by placing a segmented liquid scintillator target at 10m from the ILL reactor core, in Grenoble. Data collected since late 2016 already constrain the parameter domain favored by the Reactor Antineutrino Anomaly. One main challenge arises from the ground level location of the detector, making the measurement particularly sensitive to cosmic-rays and environment changes. We have developed a new technique to extract the neutrino spectra from the background contamination treating in a self-consistent way its time variations. In this approach, based on the analysis of the Pulse Shape Discrimination signal, the information gathered in reactor-OFF periods is only used to constrain the relative contributions of the background components (electron and proton recoils), all the other parameters being directly measured during reactor-ON periods. In this poster I will detail this procedure as well as the analysis of background components.

Authorship annotation

for the STEREO collaboration

Session and Location

Monday Session, Poster Wall #197 (Ballroom)

Poster included in proceedings:

yes

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Track Classification: Poster (participating in poster prize competition)