

## Status of the Reactor Anti-Neutrino Anomaly

### Authorship annotation

M.Dentler, A.Hernandez-Cabezudo, J.Kopp, P.Machado, M.Maltoni, I.Martinez-Soler and T.Schwetz

### Session and Location

Monday Session, Poster Wall #147 (Hölderlin-Room)

### Abstract content

The measurements of the anti-neutrinos fluxes coming from nuclear reactors present a deficit with respect to the theoretical predictions, known as the reactor anti-neutrino anomaly. Sterile neutrino oscillations could solve the problem, with a new massive neutrino order 1eV. A miscalculation of the anti-neutrino flux predictions could also be the main source of the anomaly. We performed a global fit to all the reactor anti-neutrino data and find a preference of  $3\sigma$  for the sterile neutrino oscillation with  $\Delta m^2 = 1.3\text{eV}$  and  $|U_{e4}| \sim 0.1$ , even without taking any assumption for the neutrino fluxes and fitting them to the data as well as the sterile oscillation. We find that this result is mainly driven by the new reactor short baseline experiments, DANSS (preliminary data) and NEOS, which are independent of the reactor neutrino flux predictions, since their analyses are based on bin-by-bin energy spectral ratios.

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### Poster included in proceedings:

no

**Primary author(s) :** Mr. HERNANDEZ-CABEZUDO, Alvaro (Karlsruhe Institute of Technology)

**Presenter(s) :** Mr. HERNANDEZ-CABEZUDO, Alvaro (Karlsruhe Institute of Technology)

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