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Accurate neutrino measurements at short distances from reactors

Monday, 17 June 2024 17:10 (25 minutes)

The unveiling of the reactor antineutrino anomaly in 2011 revived interest in measurements at very short distances from reactors with primary motivation to test the hypothesis of an oscillation towards a sterile neutrino of mass around 1 eV as an explanation for the observed deficit of neutrinos compared with predictions. An experimental program has been developed at commercial as well as research reactors. In this presentation, I will discuss the challenges of these experiments, carried out at the earth's surface and with reduced target volumes. I will review the oscillation analyses that test the sterile neutrino hypothesis in a model-independent way. We will see that through this generation of experiments, the neutrino spectra emitted by the reactors are measured with great precision, providing a new benchmark for future neutrino experiments as well as for the nuclear data involved in predictions.

Poster prize

Given name

Surname

First affiliation

Second affiliation

Institutional email

Gender

Collaboration (if any)

Presenter: LHUILLIER, David (CEA-Saclay)

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