

Constraining non-standard neutrino interactions with Borexino spectral data

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Abstract: The current experimental framework does not entirely exclude the possibility of weak-strength non-standard interactions (NSIs) between neutrinos and leptons. These interactions are classified into two types: Neutral Current (NC) and Charged Current (CC). NC NSIs affect neutrino propagation through matter, while CC NSIs are crucial for the production and detection of neutrinos. The Borexino experiment, located at the Laboratori Nazionali del Gran Sasso (LNGS), excels in detecting solar neutrinos through neutrino-electron elastic scattering in a ~280-ton liquid scintillator target. This setup is particularly suited for identifying signatures of such non-standard interactions. In this presentation, we discuss our investigation of NSIs using Borexino experimental data, focusing on the initial efforts to constrain NSI parameters with data from Borexino Phase-II and Phase-III.

Collaboration (if any)

Borexino

Primary author: 孙, 光豹 (武汉大学)

Co-author: 丁, 雪峰 (中国科学院高能物理研究所)

Presenter: 孙, 光豹 (武汉大学)

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