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Probing New Physics with High-Energy Electronic Recoil in XENONnT

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The XENON collaboration, has used a series of xenon dual-phase time projection chambers (TPCs), to search for the first direct evidence of Dark Matter (DM) in the Universe. The latest generation experiment, XENONnT, operates in the LNGS underground facility in Italy, utilizing 5.9 tonnes of liquid xenon. With an unprecedented reduction in background level, XENONnT opens new avenues for investigating rare physical processes beyond DM. Among these searches, the study of two-neutrino double beta decay of Xe-136 has garnered interest due to its potential to provide insights into rare nuclear transitions. Precise measurement of the spectral shape of this process not only aids in constraining nuclear model predictions but also in probing physics beyond the Standard Model. This poster will cover the current status of the two-neutrino double beta decay of Xe-136 study with the XENONnT experiment.

Poster prize

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