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Implications of first LUX-ZEPLIN and XENONnT results: A comparative study of neutrino properties and light mediators

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Current and prospective state-of-the-art low-threshold direct dark matter detection experiments with multi-ton mass scale are promising facilities to probe neutrino properties and study light mediators. Very recently the LUX-ZEPLIN (LZ) and XENONnT collaborations have published initial data from their search for Weakly-Interacting-Massive-Particles (WIMPs). In these experiments, elastic neutrino-electron scattering (EνES) induced by solar neutrinos is reported to be one of the main background components. Therefore, the new data allow us to place constraints on various neutrino properties within and beyond Standard Model through EνES. In this talk I will discuss our recent work with the comparative study of neutrino electromagnetic properties and neutrino-generalized-interactions (NGIs) with light mediators, using EνES exploiting the recent LZ and XENONnT data. In particular my focus will be on the adopted methodology and the data fitting.

Session

Neutrino Physics

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