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【355】 Analysis of high-energy events in XENON1T

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The XENON1T experiment searches for Weakly Interacting Massive Particle (WIMP) dark matter candidate with a dual-phase xenon time projection chamber. Following the main result on spin-independent WIMP-nucleon scattering, the effort of the XENON collaboration is directed towards exploring other detection channels. For this purpose the signal reconstruction and data analysis need to be extended up to the MeV energy range, two order of magnitude higher than the standard WIMP analysis. This would allow in particular to perform the analysis on the ^{136}Xe neutrinoless double beta decay, fundamental to prove the Majorana nature and solve the hierarchy problem of the neutrinos. The current achievements and ongoing work aimed to explore the high energies detection channels will be presented.

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