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Enlightening the dark with XENON1T and looking forward to XENONnT

Monday, 24 February 2020 15:00 (20 minutes)

The most recent results of the XENON1T direct dark matter detector will be presented. XENON1T was a two-phase xenon TPC using 248 low radioactivity PMTs to detect scintillation signals in a 2-ton active liquid xenon target. The detector was operational between 2016 and 2018 at the Laboratori Nazionale del Gran Sasso with continuously improving xenon purity and reduction of the internal Kr-85 background source. In addition to WIMP searches, XENON1T also produced important results on nuclear processes, such as the double electron capture of 124Xe, and is sensitive to flavour independent measurements of solar and supernova neutrinos. The status of the successor experiment, XENONnT will be discussed, as well as projections for WIMP and neutrinoless double beta decay searches.

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Session Classification: Contributed Talks

Track Classification: New related detection technologies