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Latest results from the XENONnT experiment

Tuesday 22 August 2023 08:50 (20 minutes)

XENONnT is the follow-up to the XENON1T experiment aiming for the direct detection of dark matter in the form of weakly interacting massive particles (WIMPs) using a liquid xenon (LXe) time projection chamber (TPC). The detector, operated at Laboratori Nazionali del Gran Sasso (LNGS) in Italy, features a total LXe mass of 8.5 tonnes of which 5.9 tonnes are active. XENONnT has completed its first science run and is currently taking data for the second science run. It has achieved an unprecedented purity for both, electronegative contaminants, with an electron lifetime exceeding 10 ms due to a novel purification in liquid phase, and for radioactive radon, with an activity of 1.72±0.03 μBq/kg due to a novel radon distillation column.
This talk will present the latest results from the search for nuclear recoils induced by WIMPs using data from the first science run with an exposure of 1.1 tonne-year. In addition, results from other searches for non-standard interactions and new particles via their electronic interactions will be shown.

Collaboration / Activity

XENON

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