

WIMP Dark Matter searches with the XENONnT experiment

Monday, 8 July 2024 14:20 (20 minutes)

The XENONnT experiment is 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. 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 already completed its first science run and is continuing taking science data. 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 mBq/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.

Co-authors: SCHULZE EISSING, Henning; ALTHUESER, Lutz

Presenter: SCHULZE EISSING, Henning

Session Classification: Parallel 1

Track Classification: Parallel session: Direct detection