



Contribution ID: 111

Type: **not specified**

The XENONnT experiment

Wednesday, 7 September 2022 14:00 (20 minutes)

XENONnT is the follow-up to the XENON1T experiment aiming for the direct detection of dark matter 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 about 6 tonnes are active. XENONnT has completed its first science run and is currently taking data for the second science run. XENONnT has achieved 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 give an overview of the XENONnT experiment, results from the commissioning of the detector and its new subsystems, as well as the status of the analysis of the first science run and its projections.

Summary

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Session Classification: Direct DM searches