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Dark Matter Direct Detection with XENONnT: the Latest Result

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The XENON project is a multi-stage research program that aims to identify the true nature of dark matter using two-phase liquid xenon time projection chambers of increasing size and sensitivity. The current phase, XENONnT, is operating at the deep underground Laboratori Nazionali del Gran Sasso(LNGS) in Italy. The first science run was performed from May to December 2021. In this talk, I will present the first search for weakly interacting massive particles (WIMPs) using a 1.1 tonne-year exposure of XENONnT data. This exposure featured unprecedentedly low levels of electronegative impurities, and 85Kr and 222Rn background rates. After a blind analysis of the data, no significant excess is observed. Compared to previous XENON results with a comparable exposure, this search improves the sensitivity to WIMPs by a factor of 1.7.

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