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Results from the first science run of the XENONnT experiment

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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 Laboratori Nazionali del Gran Sasso in Italy. Designed to be a rapid upgrade of its predecessor XENON1T, XENONnT is expected to improve sensitivity to weakly interacting massive particles (WIMPs) by more than an order of magnitude. To accomplish this, XENONnT features new technology and infrastructure enabling it to achieve an unprecedented target purity and background level. The first science run (SR0) was performed from May to December 2021. Results from dark matter searches and other beyond the standard model processes will be shown as well as the main hardware upgrades of the experiment.

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