

Latest results and status of the XENONnT experiment.

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Despite overwhelming astronomical evidence for the existence of dark matter (DM), its fundamental nature remains one of the central open questions in modern physics. Owing to their excellent detection efficiency, scalability, and ultra-low background levels, dual-phase time projection chambers (TPCs) employing multi-tonne liquid xenon (LXe) targets are at the forefront of the search for GeV-scale DM in the form of weakly interacting massive particles (WIMPs). These detector capabilities further enable sensitivity to a broad range of rare and low-energy phenomena, including rare processes and studies of solar neutrinos and their properties. The XENONnT experiment, operated by the XENON Collaboration, is an 8.5-tonne LXe TPC located at the Laboratori Nazionali del Gran Sasso (LNGS). In this talk, we present an overview of the current status of the experiment and summarize its latest results.

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