Chair of Galileo, from which, according to tradition, he gave lectures - Credits: Univ. of Padova - M. Pistore

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Recent results from XENON1T and multi-messenger future of XENONnT

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The XENONnT detector recently started its commissioning phase at Laboratori Nazionali del Gran Sasso. Utilizing 5.9 tonnes of liquid xenon (LXe) as active target and designed for a high level of background reduction, it will greatly improve the results of its predecessor, XENON1T. Although primarily a dark matter (DM) detector whose main channel is the direct detection of Weakly Interacting Massive Particles (WIMPs), other channels such as the neutrinoless double beta decay of ^{136}Xe, the two-neutrino double electron capture process in ^{124}Xe, the standing excess of electronic recoil events observed in XENON1T data or the observation of coherent elastic scattering of ^{8}B neutrinos in LXe will play a important role in XENONnT future analysis. Furthermore, XENONnT will also focus on multi-messenger astrophysics, acting as an active observatory of supernova neutrinos and contributing to the Supernova Early Warning System (SNEWS).

We report on the latest results of XENON1T and look into the planned future of XENONnT, highlighting its plans to look for supernovae events up to the Large Magellanic Cloud in real-time and connect with SNEWS, its inter-experiment coincidence trigger and triangulation mechanisms.

Collaboration name

XENON

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Classifica Sessioni: Low Energy Neutrinos

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