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# The XENONnT direct Dark Matter detection experiment.

Located at the Laboratori Nazionali del Gran Sasso, the XENON experiment aims at the direct detection of dark matter particles deploying a low-radioactivity detector based on dual-phase time projection chamber filled with liquid xenon.
The XENONnT upgrade is expected to be able to exclude spin-independent interactions above $2 \times 10^{-48}$ cm$^2$ for a 50 GeV/c$^2$ mass WIMP, assuming 20 t×y exposure and improving purity of the xenon target. The new neutron veto will allow a better suppression of background.
The excellent sensitivity for low energy events and the unprecedented energy resolution will allow to investigate several neutrino physics channels, as already demonstrated in XENON1T by observing for the first time the $2\nu$ECEC of $^{124}$Xe. The XENONnT potential to observe CE$\nu$NS interactions from solar neutrinos, and to act as a supernovae real-time trigger will be shown.

## Mini-abstract

New possibilities for the liquid xenon dark matter detector in the field of neutrino physics.

## Experiment/Collaboration

XENON

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