

Dark Matter: the XENON perspective

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About 25% of the energy content in the Universe is made up of the yet-undetected dark matter, with the weakly interacting massive particle (WIMP) being a very well-motivated particle candidate. The search for WIMP dark matter with terrestrial detectors is currently led by ultra-sensitive instruments which use liquid xenon as a target. The XENON1T experiment at LNGS is the largest detector of this type and recently started taking data. We will report on its status and prospects. In addition, liquid xenon detectors are also sensitive to various other science channels. Examples are: axions and axion-like particles, low-energetic solar neutrinos, coherent neutrino-nucleus scattering, supernova neutrinos as well as various rare nuclear decays.

The sensitivity of the ultimate liquid xenon detector DARWIN to WIMP dark matter and these new channels will be discussed as well.