



ID de Contribution: 34

Type: **Talk**

Dark Matter Detection in Liquid Argon with DarkSide-20k

jeudi 28 mars 2024 17:45 (15 minutes)

DarkSide-20k is the next generation dual-phase TPC for direct dark matter search with 50 ton underground argon target, currently under construction at LNGS (Italy). With data taking to begin in 2026, DarkSide-20k will achieve cross-section discovery sensitivity of 10^{-47} cm² searching for interactions of WIMPs with 0.1 TeV/c² mass. The sensitivity projection relies on innovative technologies such as novel low-noise, high efficiency SiPM and Gd-loaded acrylic neutron veto, and on the extraordinary background rejection power of liquid argon. In this talk, a broad overview will be provided on the status of dark matter search and on recent updates of the experiment.

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Classification de Session: Talks: PhD students session