

## The DarkSide-50 Dark Matter Detector

DarkSide-50 is the first physics detector of the DarkSide dark matter search program. The detector features a dual phase underground argon Time Projection Chamber (TPC) of 50 kg active mass surrounded by an organic liquid scintillator neutron veto and a water-Cherenkov muon detector. The TPC is currently fully shielded and operating underground at Gran Sasso National Laboratory (LNGS) using research grade atmospheric argon. Exploiting the high rate of electronic recoils from  $^{39}\text{Ar}$  in regular argon to collect the background statistics expected in a few years of data taking with low-radioactivity underground argon, this first run is focused on the study of the detector response and its performance in background suppression.

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