

# DarkSide WIMP Search with Underground Argon

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DarkSide-50 is a direct WIMP detection experiment at Gran Sasso underground laboratory in Italy based on a 50 kg dual-phase argon Time Projection Chamber with liquid argon from underground sources.

DarkSide-50 aims to perform background-free WIMP searches with active vetos of a 30 tonne liquid scintillator neutron veto and a 1 k tonne water Cherenkov muon veto. DarkSide-50 has been taking data with underground Ar, which is significantly depleted in radioactive  $^{39}\text{Ar}$ , and measured its depletion factor.

The result of WIMP searches with 70 live-days of underground argon data will be presented. Also, the recent study of the liquid scintillator veto's performance and the future plan will be discussed.

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