

# DarkSide experiment: present results of the dark matter search and steps toward the 20 ton LAr detector

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## Summary

DarkSide-50 is a direct dark matter experiment operating in the underground Laboratori Nazionali del Gran Sasso (LNGS). DarkSide experiment published the first dark matter search performed with low radioactivity argon in the DarkSide-50 detector. Results of this search will be presented along with the physics potential for the future 20 ton detector. The 20 ton detector is made possible by breakthroughs in Si photomultiplier technology and a very low radioactivity levels of  $^{39}\text{Ar}$  present in argon from underground sources among other advances.

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