

Abstract Submitted
for the APR20 Meeting of
The American Physical Society

DarkSide-20k and its research and development YI WANG, University of California, Los Angeles, DARKSIDE COLLABORATION — The DarkSide-20k project is aiming to use a dual-phase argon detector to search WIMPs. It has the capability to push the sensitivity for WIMP detection several orders of magnitude beyond current levels. It will have ultra-low backgrounds and sensitivity to WIMP-nucleon cross section down to $1.2 \times 10^{47} \text{ cm}^2$ for WIMPs of $1 \text{ TeV}/c^2$ mass with a LAr exposure of 100 t yr. The DarkSide-20k detector is currently under construction at LNGS. The detector mainly consists of a sealed acrylic Time Projection Chamber (TPC), an active neutron veto constructed by gadolinium-doped acrylic panels and a membrane cryostat. The RD of the TPC and the cryogenic system is currently in progress at CERN. The RD of the veto detector is also underway, by cooperating with a company called Donchamp Acrylic. This talk will give an overview of the DarkSide-20k detector and discuss the RD work for the TPC, the cryogenic system and the Veto detector.

Yi Wang
University of California, Los Angeles

Date submitted: 10 Jan 2020

Electronic form version 1.4