Contribution ID: **7** Type: **not specified**

DarkSide Program

Wednesday, June 22, 2022 9:45 AM (15 minutes)

The DarkSide program is a direct WIMP dark matter search experiment using liquid argon time projection chamber (LAr-TPC). Its primary detector, DarkSide-50, run since 2015 a 50-kg-active-mass LAr-TPC filled with low radioactivity argon from underground source and produced world-class results for both the low mass (M_WIMP < 10 GeV/c2) and high mass (> 100 GeV/c2) WIMP search. The next stage of the program will be the DarkSide-20k, a 20-tonne fiducial mass LAr-TPC with SiPM based cryogenic photosensors, expected to be free of any background for exposure of 100 tonne x year. DarkSide-LM is another future experiment focusing on the low mass WIMP with an expected sensitivity down to the “solar-neutrino floor”. This talk will give the latest updates and prospect on these experiments.

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Session Classification: Cosmic Physics