



EP Seminar

Darkside latest results and the future liquid argon dark matter program



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 Tuesday 24 Jul 2018, 11:00 → 12:00 Europe/Zurich

 503-1-001 - Council Chamber (CERN)

Description DarkSide uses a dual-phase Liquid Argon Time Projection Chamber running since mid 2015 with a 50-kg-active-mass target from an underground source, to search for WIMP dark matter. The talk will present the latest result on the search for low mass WIMPs ($M_{WIMP} < 20\text{GeV}/c^2$) extending the exclusion region below previous limits in the range $1.8 - 6\text{GeV}/c^2$, as well as a search for high mass WIMPs ($M_{WIMP} > 100\text{GeV}/c^2$) with 0 background reported in the signal region giving the most competitive result obtained with an Argon target.

The next stage of the Darkside program will be a new generation experiment involving a global collaboration from all the current Argon based experiments. DarkSide-20k is designed as a >20-tonne fiducial mass TPC with SiPM based photosensors, expected to achieve an instrumental background well below that from coherent scattering of solar and atmospheric neutrinos. Like its predecessor DarkSide-20k will be housed at the Gran Sasso (LNGS) underground laboratory, and it is expected to attain a WIMP-nucleon cross section exclusion sensitivity of 10^{-47}cm^2 for a WIMP mass of $1\text{TeV}/c^2$ in a 5 yr run.

Organized by M. Pepe-Altarelli, G. Unal..... Refreshments will be served at 10h30