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Giuliana Fiorillo (U. di Napoli, INFN): Darkside-20k and the future Liquid Argon Dark Matter program

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The next stage of the Darkside program for direct dark matter searches will involve a global collaboration from all the current Argon based experiments. DarkSide-20k has been recently approved and is based on a 20-tonne fiducial mass TPC with SiPM based photosensors and filled with Argon from an underground source. It is designed to have a 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 of 10^{-47} cm² for a WIMP mass of 1TeV/c² in a 5 yr run. Plans for a further step towards a larger mass detector capable of exploring the Dark Matter parameter space to the neutrino floor will be reviewed.

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