

Current activity and plans of the CIEMAT-DM group

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In 2015 the CIEMAT Dark Matter group was one of the original proponents of the DarkSide-20k Collaboration, which plans to build a 20 ton liquid argon dual-phase TPC at LNGS with data taking starting in 2021. The new collaboration gathers now most of the groups previously involved in the ArDM, DarkSide-50 and DEAP-3600 project, creating a new unified effort in the DM direct searches field with liquid argon. The experiment is planned to be the most sensitive for massive WIMPs, reaching the so-called neutrino floor.

The CIEMAT group has 6 senior members. It is active in different areas of the experiment, particularly taking a leading role in the detector construction and background assessment. At the same time, thanks also to the synergy with LSC and the mass spectroscopy division at CIEMAT, the group is responsible for the material assay campaign, which is one of the key task for the success of the experiment.

The current status and the future plans of the CIEMAT-DM group will be presented in this talk, including a brief overview of the R&D activity on the LAr technology carried out in Madrid.

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