

# Status and short term prospects of DArT, the Underground Ar measurement at Canfranc

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DarkSide-20k is under construction at LNGS and is designed to lead the search for heavy WIMPs in the coming years. Measuring the Ar-39 content in underground argon (UAr) is crucial for the successful operation of the detector and, to achieve this goal, the Global Argon Dark Matter Collaboration (GADMC) is building the DArTinArDM experiment at the Canfranc Underground Laboratory in Spain. The DArT chamber, a radiopure detector (~1 liter) filled with UAr, will be situated at the core of the ArDM experiment. With approximately 1 ton of atmospheric argon, ArDM will serve as an active veto against external radiation. DArTinArDM aims to measure the Ar-39 depletion factor in the UAr with a sensitivity greater than 0.1 mBq/kg. This evaluation will be conducted on various samples from each batch of underground argon to ensure their radiopurity meets the necessary standards before filling DS-20k.

In this presentation, I will report on the findings and improvements after 2 years of data taking in a test cryostat and the prospects of the DArTinArDM experiment, which will start operating this year.

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