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Status and prospects of DEAP-3600 after the third fill with liquid Ar

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DEAP-3600 is an experiment performing direct dark matter searches since 2016. The detector has just undergone a third fill in order to achieve its goal sensitivity of $1e-46$ cm² for the WIMP-nucleon interaction cross section. This science case is achievable thanks to its location 2 km underground at SNOLAB, a thorough RnD to minimize its background and the background discrimination capabilities only achievable with liquid Ar.

Because of its uniqueness, DEAP is leading the search of some exotic candidates and is producing physically relevant results in the field of rare event searches. It is moreover playing a pivotal role in the framework of the Global Argon Dark Matter Collaboration. The expertise accumulated and the analyses performed are central for the success of the DarkSide-20k.

In this talk I plan to address the status and prospects of the experiment, including dark matter searches and potential for neutrino physics.

Abstract

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