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## Constraints on dark matter-nucleon effective couplings with DEAP-3600 and prospects for the next campaign

*Tuesday 19 July 2022 18:20 (20 minutes)*

DEAP-3600 is a WIMP dark matter direct-detection experiment located 2 km underground at SNOLAB (Canada), which uses liquid argon as the target material. The detector consists of 3.3 tonnes of liquid argon in a large acrylic cryostat instrumented with 255 photomultiplier tubes.

In this talk, we first analyze our data exploring different non-relativistic effective operators for the Dark matter-nucleon interaction, evidencing the importance of multiple target materials to characterize it. In particular, this research includes some isospin-violating scenarios where world-leading limits were achieved with DEAP. We will also discuss the consequences of using models different than the standard halo model, like halo substructures, for the dark matter distribution in the galaxy. We will close presenting the physics program beyond WIMP searches, the hardware upgrades being implemented and the prospects of this experiment once they are finalized.

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