

Update on the MiniCLEAN Experiment

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One technology being examined for future direct dark matter searches is a single-phase noble liquid detector. The MiniCLEAN experiment is a test of such an approach, using liquid argon to search for WIMPs via nuclear recoils. The detector, located at SNOLAB, will have a 500 kg (150 kg) target (fiducial) mass and is instrumented with cold photomultiplier tubes. Pulse-shape discrimination will be used to reject the large Ar-39 radioactive background. The CLEAN design allows the argon target to be exchanged with neon, meaning that a potential signal can be checked via the dependence on nuclear mass. MiniCLEAN will also be run with an enhanced Ar-39 “spike” to demonstrate the pulse shape discrimination capability. An update on the commissioning status of the experiment will be presented.

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