

The PICO-40L Direct Detection Experiment

To continue to make progress in the global effort to understand the nature of dark matter, it is essential to further explore the spin-dependent WIMP-nucleon interaction parameter space. The PICO-40L bubble chamber is a dark matter direct detection experiment located at the SNOLAB underground research facility outside Sudbury, Canada. The abundance of non-zero-spin fluorine nucleons in the superheated C_3F_8 target fluid gives PICO-40L the potential to set world-leading exclusion limits for WIMP-proton interactions. PICO-40L is fully assembled and currently in the commissioning phase. An overview of the detector and analysis strategy, as well as the results from some early commissioning runs, will be presented in this talk.

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