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The LZ System Test at SLAC

Friday, 13 October 2017 15:00 (15 minutes)

LZ is a next generation dark matter search experiment, designed to significantly extend our sensitivity to WIMP dark matter candidates. At the core of LZ is a dual-phase Xe time projection chamber (TPC) with a 7 ton active volume. A cryogenic test platform with a ~100 kg TPC has been constructed at SLAC to test multiple subsystems at scales approaching or comparable to LZ. The platform focuses on high voltage performance of the TPC and on the Xe circulation and purification system, while also providing an opportunity to test the integration of other subsystems. Unexpectedly high signal rates were discovered while studying the performance of the anode and gate grids. An overview of the test platform will be presented with a particular focus on the grids' performance, including results observed to date and the near future testing program. Our testing methods for large scale grids bridging gas and liquid performance may be of interest to future liquid noble experiments.

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