

Status of the LUX-ZEPLIN Dark Matter Experiment

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LUX-ZEPLIN (LZ) is a direct detection dark matter experiment located nearly a mile underground at the Sanford Underground Research Facility in South Dakota, USA employing a 7 tonne active volume of liquid xenon in a dual-phase time projection chamber (TPC). It is further surrounded by a three-component veto system: an instrumented 2-tonne liquid xenon skin, a near-hermetic gadolinium-loaded liquid scintillator, and instrumented, ultra-pure water tank. The experiment has been taking data since 2021, and in 2024 released world-leading constraints excluding WIMP-nucleon cross-sections to WIMP masses $\geq 9 \text{ GeV}/c^2$. This talk will discuss the status of the LZ experiment and report on its recent science results.

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Session Classification: SESSION 10: Direct Detection: status of liquid/gas WIMP detectors