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Status of the LUX-ZEPLIN (LZ) Experiment

LUX-ZEPLIN (LZ) is a direct dark matter experiment, primarily designed to search for WIMPs, installed 1.5 km underground at the Sanford Underground Research Facility in Lead, South Dakota. It features a two-phase xenon time projection chamber with an active mass of 7 tonnes, surrounded by an instrumented xenon “skin” and a liquid scintillator outer detector which are used as active vetoes. The entire setup is installed inside a tank of ultra-pure water to shield it from external radiation. LZ will reach an unprecedented sensitivity to the WIMP-nucleon spin-independent cross-section of 1.4x10^-48 cm^2 for a 40 GeV/c^2 mass WIMP after a 1000 live day run, using an inner fiducial mass of 5.6 tonnes with minimal gamma-ray and neutron backgrounds. This is an improvement of more than one order of magnitude over the current best results. This talk will provide an overview of the experiment and report on its status.

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