



UNIVERSITY
OF TRENTO - Italy
Department of Physics

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Direct Dark Matter Detection with the LUX-ZEPLIN Experiment

Abstract:

LUX-ZEPLIN (LZ) is a direct detection dark matter experiment located at the Sanford Underground Research Facility in Lead, South Dakota. The experiment consists of three nested detectors; a dual phase xenon time projection chamber (TPC), an actively instrumented liquid xenon skin, and an outer detector neutron veto formed by 10 acrylic tanks of gadolinium-loaded liquid scintillator. The active region of the xenon TPC contains 7 tonnes of liquid xenon with a 5.6 tonne fiducial volume, allowing us to reach a WIMP-nucleon spin-independent cross section sensitivity of $1.4 \times 10^{-48} \text{ cm}^2$ for a $40 \text{ GeV}/c^2$ mass in 1000 live days. This talk will provide an overview of the LZ experiment and report on its status.

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