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First dark matter search results from the LZ experiment

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The LUX-ZEPLIN (LZ) experiment is a dark matter detector centred on a dual-phase xenon time projection chamber operating at the Sanford Underground Research Facility in Lead, South Dakota, USA. Results from LZ's first search for Weakly Interacting Massive Particles (WIMPs) with an exposure of 60 live days using a fiducial mass of 5.5 tonnes were recently published. A profile-likelihood analysis shows the data to be consistent with a background-only hypothesis, setting new limits on spin-independent WIMP-nucleon cross-sections for WIMP masses above $9 \text{ GeV}/c^2$. The most stringent limit is set at $30 \text{ GeV}/c^2$, excluding cross-sections above $5.9 \times 10^{-48} \text{ cm}^2$ at the 90% confidence level. This talk will give an overview of the LZ detector, a description of the first results, and a brief look at the science program that is now accessible with the LZ experiment.

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