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## First results from the WIMP dark matter search with the LZ experiment

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The LUX-ZEPLIN (LZ) experiment utilises a dual-phase xenon technology to search for dark matter in a wide range of WIMP masses. The setup includes xenon time projection chamber, xenon skin region and the outer detector made of Gd-loaded liquid scintillator. The detector is operating at the Sanford Underground Research Facility in Lead, South Dakota, USA. The detector has been calibrated with a variety of beta, gamma-ray and neutron sources to accurately study its performance in searching for dark matter WIMPs and rejecting unwanted backgrounds. We present here the results of the first science run with the live time of 60 days and a fiducial mass of 5.5 tonnes of liquid xenon. A comprehensive analysis based on profile likelihood ratio has not revealed any statistically significant excess over expected backgrounds. The absence of the signal has led to very strong limits on the spin-independent WIMP-nucleon cross-section for WIMP masses greater than 9 GeV. We report also the limits on spin-dependent WIMP-proton and WIMP-neutron cross-sections.

**Primary author:** KUDRYAVTSEV, Vitaly (University of Sheffield)

**Presenter:** KUDRYAVTSEV, Vitaly (University of Sheffield)

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