

30th International Symposium on Lepton Photon Interactions at High Energies



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LZ status and simulations

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LUX-ZEPLIN (LZ) is a dark matter direct detection experiment currently being commissioned at the Sanford Underground Research Facility in Lead, South Dakota. At the heart of the detector is a dual-phase time projection chamber containing 7 tonnes of active liquid xenon. During its 1000-day science run, LZ aims to achieve unprecedented sensitivity to Weakly Interacting Massive Particles (WIMPs) down to a WIMP-nucleon spin-independent cross section of about $1.4 \times 10^{-48} \text{cm}^2$ for a $40 \text{GeV}/c^2$ mass WIMP. In this talk I will introduce the LZ detector and the status of the experiment. I will also give an overview of the LZ simulation framework and how it is used to predict LZ's sensitivity to additional well motivated dark matter models and physics beyond the Standard Model searches.

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