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The LZ Dark Matter Experiment

CARMEN CARMONA-BENITEZ, Pennsylvania State University

The identification of dark matter is presently one of the greatest challenges in science, fundamental to our understanding of the Universe. The LUX-ZEPLIN (LZ) collaboration has grown out of these two precursor experiments, with the goal of constructing a next generation dark matter detector at the Sanford Underground Research Facility (SURF) in Lead, South Dakota, using a dual-phase time projection chamber with 7 tonnes of active liquid xenon. This experiment aims to achieve unprecedented sensitivity to weakly interacting massive particles (WIMPs) and is projected to reach a WIMP-nucleon spin-independent cross section of about $1.4 \times 10^{-48} \text{ cm}^2$ for a $40 \text{ GeV}/c^2$ WIMP mass in a 1000 live-days, pushing its sensitivity close to irreducible neutrino backgrounds. The LZ experiment is well underway, and expected to begin data taking in 2021. This talk will present an overview of the LZ detector design, projected sensitivity and the current status of the experiment.