

The LZ Outer Detector

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The LUX-ZEPLIN (LZ) detector will consist of 7 tonnes (5.6 tonnes fiducial) of liquified xenon in a dual-phase Time Projection Chamber (TPC), which is sensitive to the nuclear recoil induced by Weakly Interacting Massive Particles (WIMPs). Among the various type of background particles, neutrons pose a great threat to the WIMPs searches due to the indistinguishable nuclear recoil. The outer detector of LZ is equipped with 17 tonnes of Gadolinium-doped Liquid Scintillator (GdLS) that captures neutrons with very high efficiency. The LZ outer detector will characterize the external background, increasing the fiducial volume of LZ by 70%. I will present the design, expected performance and current status of the LZ outer detector.

Reference to paper (DOI or arXiv)

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Primary author(s) : BIRCH, Harvey (University of Michigan)

Co-author(s) : WANG, Juijen (Ryan) (University of Michigan)

Presenter(s) : BIRCH, Harvey (University of Michigan)

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