

UCLA High Energy & Astro-Particle (HEAP) Seminar

“Modeling and Characterization of MeV-Scale Interactions in Liquid Xenon Detectors from LZ to XLZD”

Presented by Miguel Hernandez
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The LUX-ZEPLIN (LZ) experiment currently provides the world-leading constraints on spin-independent and spin-dependent WIMP-nucleon cross sections for masses $\geq 9\text{GeV}/c^2$. Extensive radio-assays have minimized internal and external contaminants, enabling studies of fundamental nuclear processes at the MeV energy scale in the detector's ultra-low background inner fiducial volume. This talk will highlight several potential decay channels, such as the recent measurement of Xe-125 positron emission branching fraction, and discuss the modeling challenges overcome to accurately characterize these types of interactions. Ongoing local hardware developments will also be presented, aimed at improving background understanding in future xenon-based experiments.

Location: Knudsen 4-134

Date: Monday, November 10, 2025

Time: 12:00pm

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