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## **Kelsey Oliver-Mallory (LBNL): Determination of Backgrounds for the LUX Experiment**

*Friday, 23 February 2018 17:00 (15 minutes)*

LUX (Large Underground Xenon) is a retired 250 kg liquid xenon dark matter direct detection experiment. Determination of radiogenic backgrounds is essential for accurate extraction of signals and optimization of detector sensitivity. In this talk, we present analyses of backgrounds in the LUX detector, extending the energy scale beyond what is documented in previous publications. This work enables us to perform physics searches beyond the signal range of the spin independent WIMP (weakly interacting massive particle) interaction, and further refines our determination of contamination intrinsic to the xenon and originating from the detector's materials. The impact of the revised backgrounds on the detector sensitivity will be discussed.

**Presenter:** OLIVER-MALLORY, Kelsey (Lawrence Berkeley National Laboratory)

**Session Classification:** Session 16