Contribution ID: **129** Type: **Talk**

Sally Shaw (UCSB): The LZ Outer Detector

Friday 23 February 2018 15:30 (15 minutes)

The LUX-ZEPLIN (LZ) dark matter experiment will consist of 7 active tonnes of liquid xenon sensitive to the nuclear recoils induced by impinging weakly interacting massive particles (WIMPs). Backgrounds to a WIMP signal tend to populate the boundaries of the LZ sensitive volume, where gamma-rays and neutrons from nearby material can enter, scatter once, and exit. The Outer Detector (OD) of LZ consists of 17 tonnes of gadolinium-loaded liquid scintillator, surrounding the LZ liquid xenon, and is capable of efficiently tagging both gamma-rays and neutrons which have scattered in the liquid xenon. The OD provides a substantial increase in the background-free liquid xenon mass of LZ, expanding the volume available for WIMP search. We will report on the design studies, radioactive background requirements and results, and expected performance of the LZ Outer Detector.

Presenter: Dr SHAW, Sally (UCSB)

Session Classification: Session 15