Contribution ID: **9** Type: **Oral**

CEvNS and Dark Matter Signal in the LZ experiment

Wednesday 6 October 2021 10:35 (10 minutes)

LUX-ZEPLIN (LZ) is the largest noble liquid dark matter detector 1 mile underground at the Sanford Underground Research Facility (SURF) in Lead, SD. Using 7-ton liquid xenon as a target, LZ is projected to reach unprecedented sensitivities for WIMP in the mass range from 1 GeV/c2 to 10 TeV/c2. Aside from traditional WIMP searches, LZ will also be sensitive to Coherent Elastic neutrino-nucleus scattering (CEvNS) for neutrino of energy at the MeV-GeV scale. Since the CEvNS produces nuclear recoil signatures similar to WIMPs, its presence presents both challenges and opportunities for noble liquid experiments. In this talk, I will present an overview of the LZ experiment, and its potential in observing natural neutrinos via CEvNS. Then I will discuss the challenge it presents for LZ and its future generation experiment.

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Session Classification: Dark Matter Experiments