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Contribution ID: **342** Type: **Oral Competition (Graduate Student) / Compétition orale (Étudiant(e) du 2e ou 3e cycle)**

(G*) The Light-only Liquid Xenon experiment - Status and Updates

Thursday 10 June 2021 12:15 (10 minutes)

The Light-only Liquid Xenon (LoLX) project aims to study the properties of light emission and transport in liquid xenon (LXe) using silicon photomultipliers (SiPMs). By investigating scintillation and Chernekov emission in LXe, LoLX will develop Cherenkov-scintillation separation with SiPMs as a background discrimination technique for low-background LXe experiments, e.g. searches for neutrinoless double beta decay. The first phase of LoLX consists of a baseball-sized octagonal cylinder that houses 24 Hamamatsu VUV4 SiPMs, a total of 96 readout channels. Covering 92 of these channels are 225 nm high-pass filters that block out the Xe scintillation light. These filters allow the long-wavelength components of the Cherenkov and scintillation light to go through, providing an independent measurement of their light yields. The initial goal of LoLX is to measure these light yields from ^{90}Sr β-decays (Cherenkov + scintillation emission) and ^{210}Po α-decays (scintillation only) in LXe. These measurements will be used to validate optical transport simulations in GEANT4, and verify measurements of vacuum UV reflectivities being performed at TRIUMF. This talk will give an overview of the LoLX project and provide an update on its current status and latest results.

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