

The Light-only Liquid Xenon (LoLX) Project

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The LoLX project aims to study the properties of light emission in LXe. Investigating timing characteristics of both the scintillation and Cherenkov light, LoLX will explore the abilities of single-phase LXe detectors for particle physics and medical imaging. The first phase of the LoLX detector consists of 24 Hamamatsu VUV4 Silicon photomultipliers (SiPMs), giving a total of 96 channels arranged in an octagonal cylinder. Covering 88 of the channels are long-pass filters, which block the Xe scintillation light allowing for independent measurements of the long-wavelength Cherenkov and VUV scintillation light. The first stage of LoLX aims to measure the Cherenkov and scintillation yields from ^{90}Sr beta-decays and ^{210}Po alpha-decays. This data will validate optical transport simulations using GEANT4 and VUV light reflectivity measurements performed at TRIUMF. LoLX is currently commissioning and taking initial data, the current state and outlook for the LoLX project will be presented.

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