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Contribution ID: 479 Type: **Poster Competition (Graduate Student) / Compétition affiches (Étudiant(e) 2e ou 3e cycle)**

(G*) POS-J81 – Study of External Crosstalk in Light-only Liquid Xenon (LoLX) experiment

Wednesday 9 June 2021 13:47 (2 minutes)

The Light-only Liquid Xenon experiment aims to investigate scintillation and Cherenkov emission in Liquid Xenon (LXe). This is a small experiment set up consisting of 24 Hamamatsu Silicon Photomultipliers (SiPM), giving a total of 96 channels arranged in an octagonal cylinder. 92 of these channels are covered with 225 nm high pass filters which help measure Cherenkov and VUV scintillation light, by blocking Xe scintillation. This experiment is designed in part to gain a clear understanding of the phenomena that contributes to mis-reconstruction of the scintillation light flashes for the future experiments, nEXO, DarkSide-20k and ARGO. One such factor is External Cross-talk. External cross-talk is a phenomenon in which a signal in one SiPM produces signals in neighboring SiPMs, making observed signal higher than the actual count. Crosstalk may seriously limit the photon-counting resolution of SiPMs.

This talk will discuss results of simulation of external cross-talk in the setup produced by using GEANT4, and its characteristics.

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