

## **Study of Photon Transport and SiPM in External Electrical Field in nEXO**

The Enriched Xenon Observatory (EXO) is aiming to search for  $0\nu\beta\beta$  decays of Xe-136 using a liquid xenon TPC. nEXO is the second phase of EXO with 5 tons of enriched liquid xenon TPC, which will employ ~4 m<sup>2</sup> of SiPM arrays to detect the 175nm scintillation light from xenon. Overall photon detection efficiency includes the light transport efficiency in TPC and the photo-detection efficiency of SiPM sensor units. In the past few years many efforts have worked to understand the light transport efficiency, especially with respect to the study of SiPM reflectivity at 175nm. In addition, since a fraction of SiPMs will operate in a high electrical field environment within TPC –up to 20 kV/cm. In this poster we will report on the requirements of the SiPM photo-detector system in nEXO, and the performance in different external electrical fields.

### **Session and Location**

Monday Session, Poster Wall #99 (Auditorium Gallery Left)

### **Poster included in proceedings:**

yes

**Primary author:** Dr LV, Pin (Institute of high energy physics)

**Presenter:** Dr LV, Pin (Institute of high energy physics)

**Track Classification:** Poster (participating in poster prize competition)