

Abstract Submitted
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Gas Electron Multiplier performance under high intensity X-ray radiation DANNING DI, University of Virginia — Large size Gas Electron Multiplier (GEM) for the Super Bigbite Spectrometer (SBS) in Hall A at Thomas Jefferson National Laboratory (JLab) have been built at Detector Lab of University of Virginia(UVa). The Proton Polarimeter Back Tracker of the SBS consist of 40 GEM modules of size $60 \times 50 \text{ cm}^2$. We report R&D and quality test of the GEM detectors under high intensity X-ray radiation. Expected background rate in experiment is up to about 500 kHz/cm^2 . Such high background rate requires GEM detectors to have timing resolution of about a few nano seconds and operate stably with high rate activities going on within. X-ray with high rate up to 50 MHz/cm^2 and energy up to 50 keV was used to test the performance of GEM detectors in detector lab at UVa. Issues caused by high intensity background and detailed R&D effort to adapt GEM detectors for use in the SBS are described.

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