Contribution ID: **111** Type: **Poster**

Studies on position resolution & gain mapping of Gas Electron Multipliers (GEM) using Scalable Readout System (SRS).

Friday, 27 May 2022 08:36 (1 minute)

Position resolution and gain uniformity of gaseous ionization detectors play essential roles in tracking charged particles and subsequent imaging. In the present work, experimental studies has been conducted to investigate the position resolution, charge spread and gain uniformity of Gas Electron Multipliers based detector. These results are essential for understanding the performance of the detector. The data has been recorded using a front-end APV25 board combined with the Scalable Readout System (SRS) as DAQ. The position resolution up to 36.7 microns has been archived with a double GEM configuration with an Ar:CO2 based gas mixture. The studies on gain uniformity and charge spread were important to understand the detector performance for future application-based experiments.

Collaboration

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Session Classification: Gas Detectors - Poster session