Contribution ID: 1665

Type: Oral

Development of X-ray Monochromatization Devices for Per-Pixel Energy Calibration of Semiconductor Detectors

Friday 1 November 2024 13:15 (15 minutes)

Semiconductor pixelated detectors are expanding their applications in high-energy physics, medicine and environmental radiation monitoring. This type of detector allows for the registration of every single photon at a sufficiently high flux. To achieve a good energy resolution of the detector, per-pixel procedure of energy calibration is required, and monochromatic X-ray sources are needed for that. This study aims to develop devices for X-ray monochromatization and to investigate the capability of these devices to provide the energy calibration for semiconductor pixelated detectors.

This report will present the structure of the developed devices as well as the supporting software. In addition, measurements of the output field of energy and photon flux are provided to demonstrate the potential of the developed devices to perform the per-pixel energy calibration procedure.

Primary author: HOAI BAO PHI, TRUONG (JINR Dzhelepov Laboratory of Nuclear Problems)

Presenter: HOAI BAO PHI, TRUONG (JINR Dzhelepov Laboratory of Nuclear Problems)

Session Classification: Experimental Nuclear Physics

Track Classification: Experimental Nuclear Physics