Contribution ID: **107** Contribution code: **MOP099** Type: **Poster Presentation**

X-ray inspection for non-invasive real-time beam detection

Monday 11 August 2025 16:00 (2 hours)

Conventional methods for measuring lower-energy particle beams (<several MeV), such as Faraday cups, moving wire scanners, and scintillators, are invasive and become impractical for higher-energy beams that exceed material tolerances. Current techniques for detecting beam drift often rely on spill radiation monitoring or beam position devices with off-axis electrodes, which can produce unwanted secondary particles. This study investigates a non-invasive X-ray inspection technique for beam characterization. Through simulations, we examine optimal X-ray energies, detector-beam configurations, scattering mechanisms, and profile reconstruction methods. The results demonstrate the feasibility of real-time beam monitoring without interfering with the primary beam path, offering significant benefits for high-energy physics experiments where maintaining beam integrity is essential.

Please consider my poster for contributed oral presentation

Yes

Would you like to submit this poster in student poster session on Sunday (August 10th)

No

Footnotes

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I have read and accept the Privacy Policy Statement

Yes

Author: ROY, Prabir (Lawrence Livermore National Laboratory)

Co-authors: Dr HORSLEY, Matthew A. (Lawrence Livermore National Laboratory); Dr HEPPELMANN, Samuel G (Lawrence Livermore National Laboratory); Dr UPADHYAYULA, Sriteja (Lawrence Livermore National Laboratory); Dr HARVEY, Zachary R. (Lawrence Livermore National Laboratory); Dr DE VRIES, Wim (Lawrence Livermore National Laboratory)

Presenter: ROY, Prabir (Lawrence Livermore National Laboratory)

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