Contribution ID: **216** Contribution code: **MOPCO04** Type: **Poster Presentation**

Modelling, anomaly detection and classification of slow losses using machine learning for Diamond-II Beam Loss Monitors

Monday 8 September 2025 16:00 (2 hours)

The slow losses measured by Beam Loss Monitors (BLMs) at synchrotron light source facilities offer useful but indirect insight into the state of the beam. Patterns arise across the set of BLMs depending on the movement of insertion devices, beam current, temperature, humidity, and other contributors. A variety of neural network models were designed and evaluated to model this behaviour under user beam operation to enable anomaly detection and aid fault investigations.

Footnotes

Funding Agency

I have read and accept the Conference Policies

Yes

Author: Mr LEHMANN, Corey (John Adams Institute for Accelerator Science)

Co-authors: BOBB, Lorraine (Diamond Light Source); BURROWS, Philip (John Adams Institute for Accelerator Science; University of Oxford)

Presenter: Mr LEHMANN, Corey (John Adams Institute for Accelerator Science)

Session Classification: MOP

Track Classification: MC02: Beam Loss Monitors and Machine Protection