



Contribution ID: **207** Contribution code: **MOP059**

Type: **Poster Presentation**

## Machine learning-enhanced infrared imaging for temperature anomaly detection in power supplies

*Monday 11 August 2025 16:00 (2 hours)*

The performance of particle accelerators is critically dependent on the reliability of their power supplies, which can number in the thousands in many facilities. In this work, we present a method for monitoring temperature anomalies in power supplies using infrared (IR) imaging. By applying various machine learning algorithms to the IR imaging data, we develop a reliable anomaly detection system that can improve the uptime of accelerator facilities. This approach enables early detection of potential issues, facilitating predictive maintenance and enhancing overall operational efficiency.

### 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

### Funding Agency

Work supported by the U. S. Department of Energy, Office of Science, under Contract No. DE-AC02-06CH11357.

### I have read and accept the Privacy Policy Statement

Yes

**Author:** MOHSEN, Osama (Argonne National Laboratory)

**Co-authors:** LOBACH, Ihar (Argonne National Laboratory); BORLAND, Michael (Argonne National Laboratory); SUN, Yine (Argonne National Laboratory)

**Presenter:** MOHSEN, Osama (Argonne National Laboratory)

**Session Classification:** Monday Poster Session

**Track Classification:** MC6 - Beam Instrumentation, Controls, AI/ML, and Operational Aspects