



Contribution ID: 571 Contribution code: **WEPD087**

Type: **Poster Presentation**

## **Machine learning–based longitudinal phase space control for X-ray free-electron laser**

*Wednesday, 24 September 2025 16:30 (1h 30m)*

Precise control of the longitudinal phase space (LPS) in X-ray free-electron laser (XFEL) is critical for optimizing beam qualities and X-ray pulses properties required by the experimental stations. We present results of using machine learning techniques for LPS shaping and control with Bayesian optimization.

### **Funding Agency**

### **Footnotes**

**Author:** ZHU, Zihan (SLAC National Accelerator Laboratory)

**Co-author:** EDELEN, Auralee (SLAC National Accelerator Laboratory)

**Presenter:** ZHU, Zihan (SLAC National Accelerator Laboratory)

**Session Classification:** WEPD Posters

**Track Classification:** MC13: Artificial Intelligence & Machine Learning