

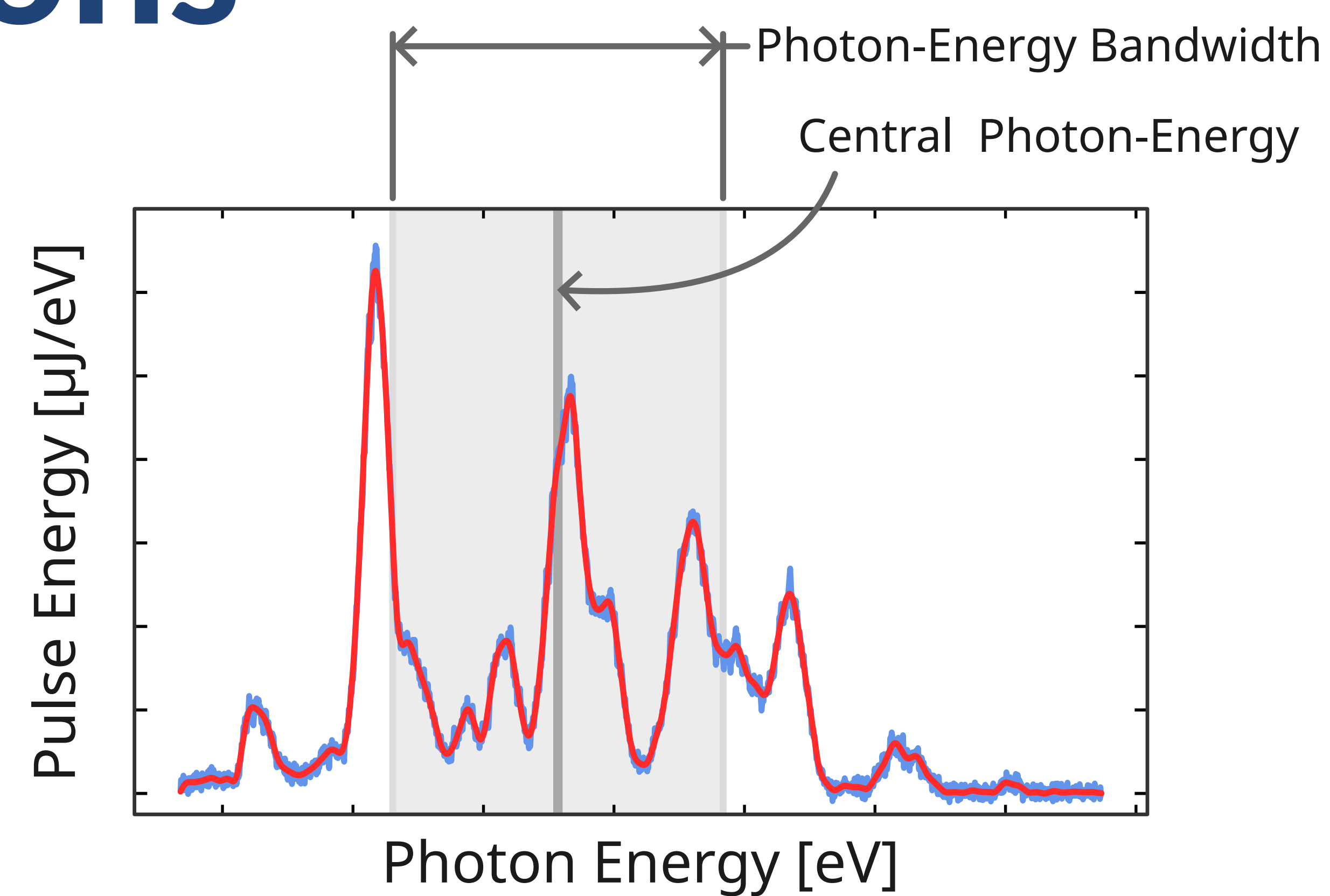
Electron-Photon Correlations

Towards Data-Driven Prediction & Fine-Tuning of X-Ray Pulses

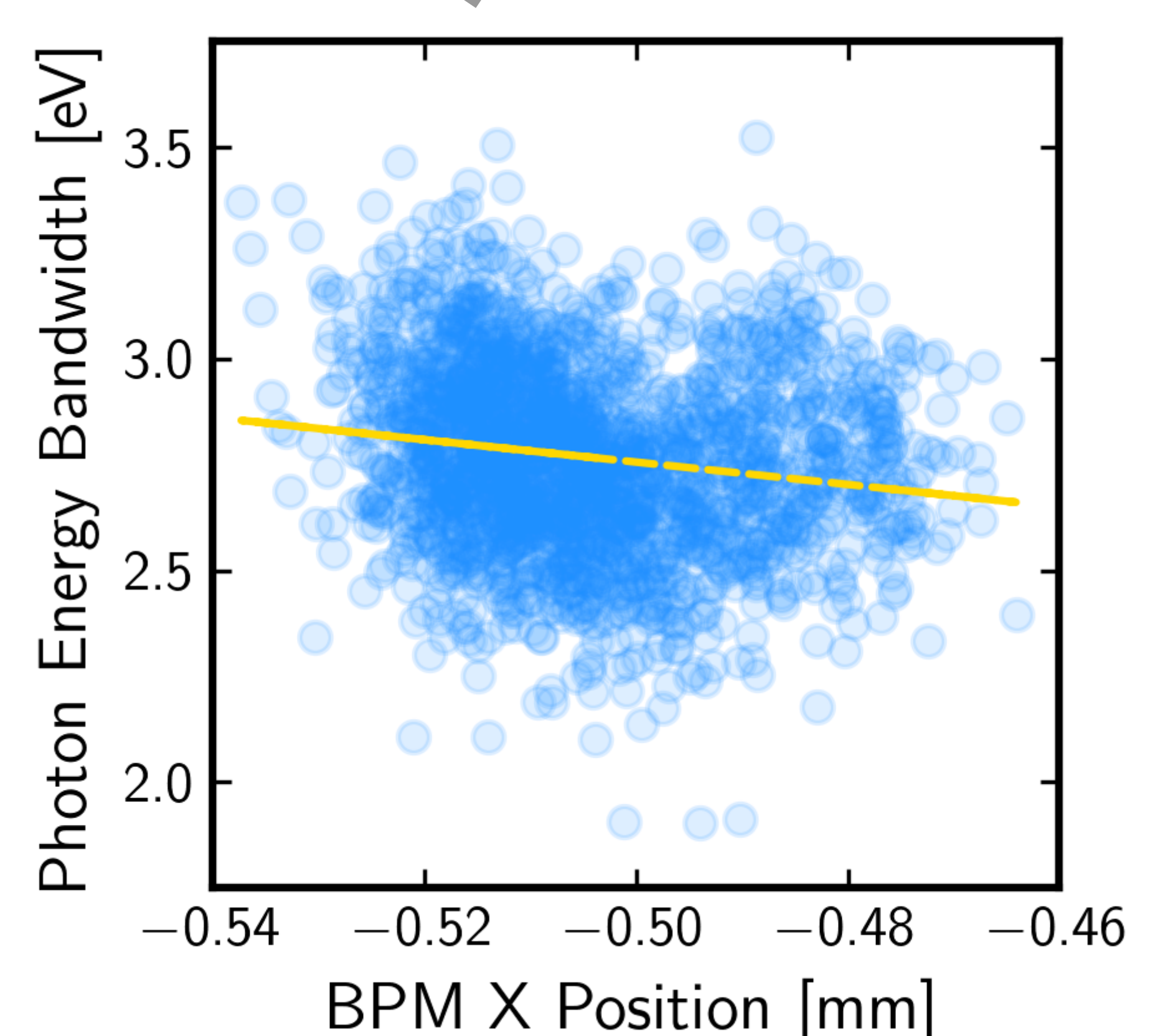
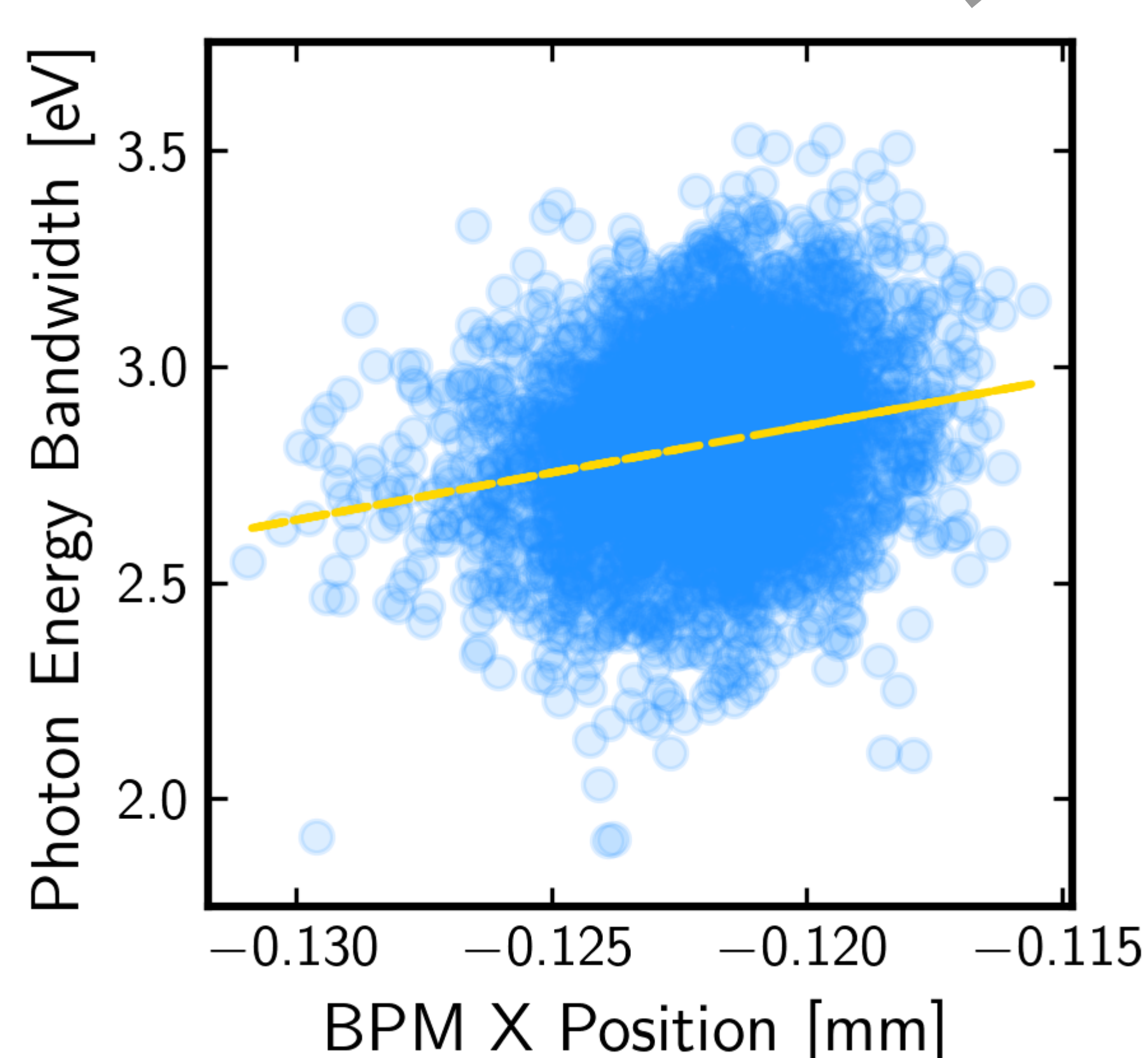
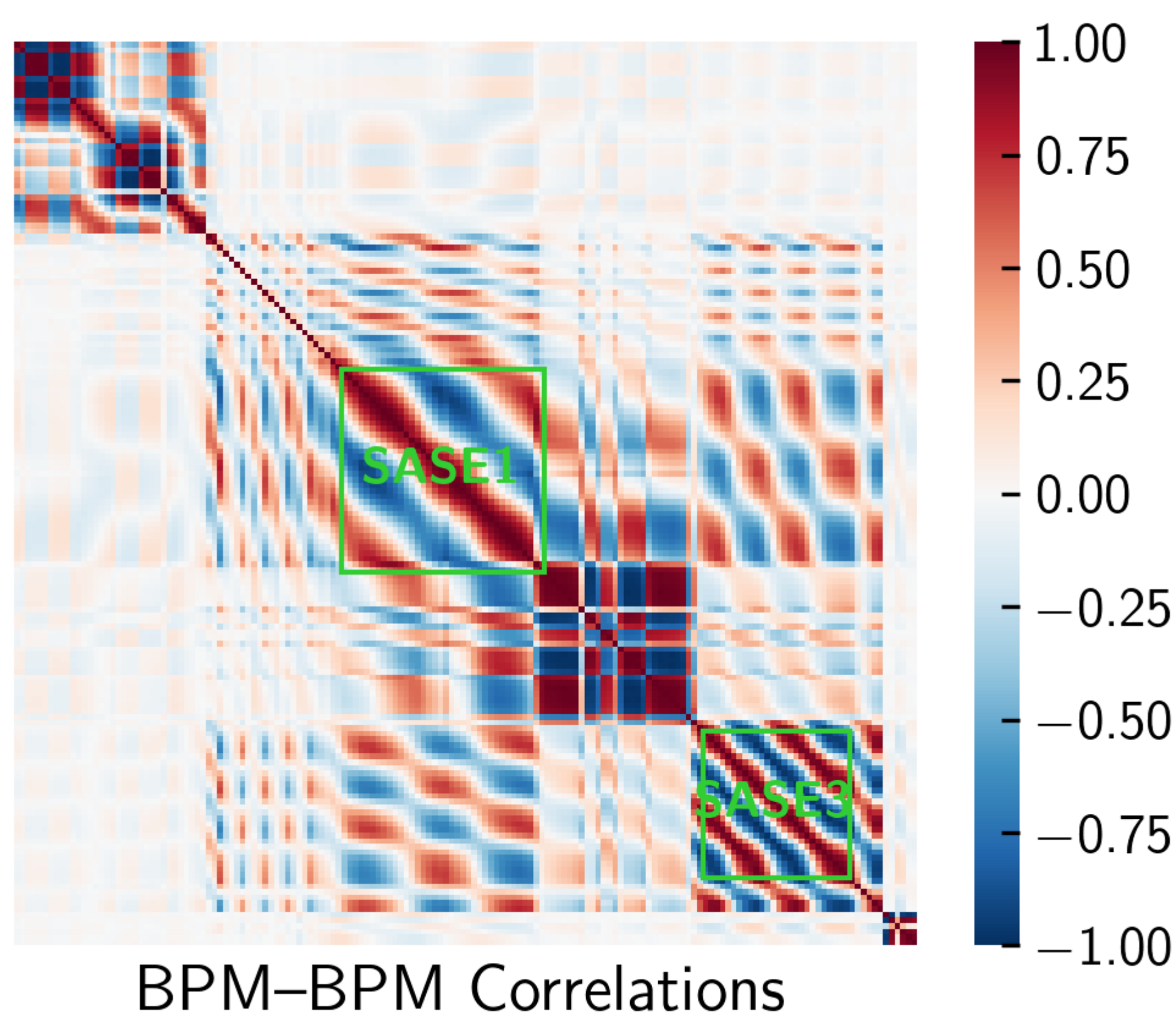
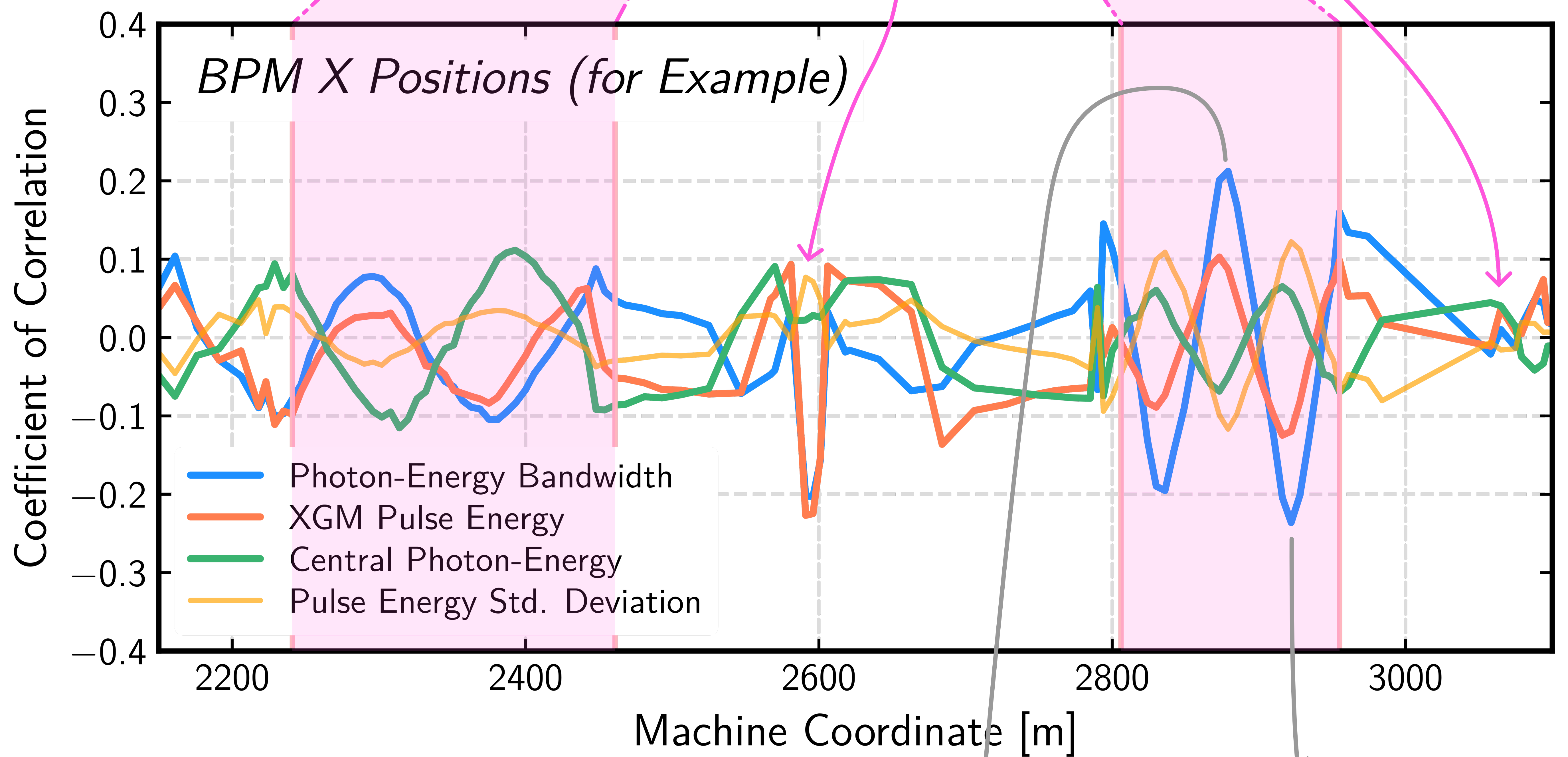
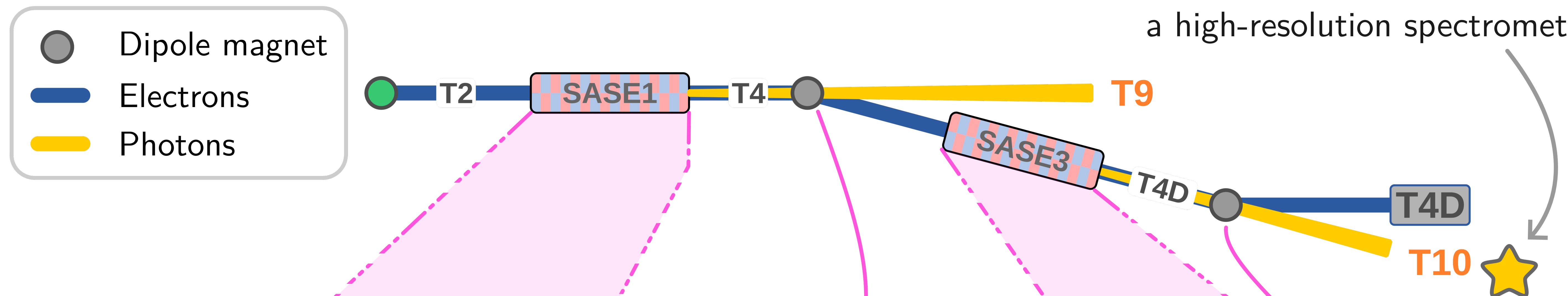
Build a **surrogate model** that leverages the vast amount of complex **diagnostic data** to provide:

- pulse-resolved and non-invasive virtual diagnostics,
- starting ranges for machine parameters to streamline setup and tuning,

in order to **enhance the scientific output** of the facility.



X-ray pulse properties from a high-resolution spectrometer



Fady Bishara, Danilo Enoque Ferreira de Lima, and Luca Gelisio
[Data Analysis group] with many colleagues from EuXFEL and DESY

Special thanks to: Stefan Düsterer, Annika Eichler, Wolfgang Freund, Andreas Galler, Gianluca Geloni, Jan Grünert, Trey Guest, Marc Guetg, Jia Liu, Tommaso Mazza, Svitozar Serkez, Tuba Conka Yildiz and many others for helpful discussions