Contribution ID: **83** Type: **not specified**

Intelligent optimization for the attosecond hard X-ray pulse generation at the European XFEL

Attosecond pulses at high photon energy are critical to study electron dynamics in atomic and molecular systems. X-ray free-electron lasers are very promising to generate high-power attosecond hard X-ray pulses. Intelligent control of the linac and undulator settings is important to enable efficient attosecond X-ray generation. In this project, we would like to explore the application of machine learning techniques, especially Bayesian optimization and intelligent optimization algorithms, to improve the quality of the attosecond hard X-ray pulses generated at the European XFEL.

Remark: Project offerers are Gianluca Geloni and Jiawei Yan.
This is a B3 accelerator project.

Group

XFEL

Project Category

B1. Physics Data Analysis and Performance (software-oriented)

Special Qualifications

Primary authors: Dr GELONI, Gianluca (European XFEL); YAN, Jiawei (Eur.XFEL (European XFEL))

Presenter: YAN, Jiawei (Eur.XFEL (European XFEL))