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Bayesian optimization for generating attosecond X-ray FEL pulses carrying orbital angular momentum

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Attosecond X-ray pulses carrying orbital angular momentum (OAM) are as a powerful tool for investigating various ultrafast phenomena, offering unique insights into the dynamics of matter at the atomic and molecular level. The self-seeded FEL with OAM (SSOAM) method providing a new way to produce attosecond X-ray vortices pulses with high intensity. In this study, we present our recent progress on optimizing the generation of high-power attosecond X-ray vortices using multi-objective Bayesian optimization.

Footnotes

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Authors: XU, Chenzhi (Shanghai Institute of Applied Physics); YAN, Jiawei (European XFEL GmbH); GELONI, Gianluca (European XFEL GmbH); LECHNER, Christoph (European XFEL GmbH); DENG, Haixiao (Shanghai Institute of Applied Physics)

Presenter: XU, Chenzhi (Shanghai Institute of Applied Physics)

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