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Measurements of single-shot attosecond X-ray pulses at high repetition rate

Thursday 14 August 2025 16:00 (2 hours)

Electron dynamics in molecules occur on attosecond timescales and drive fundamental processes such as photosynthesis, catalysis, and chemical bond transformations. Understanding these phenomena requires tools with both high temporal resolution and the capability to probe molecular dynamics at high repetition rates. Here, we present the first single-shot measurements of attosecond soft x-ray pulses at the superconducting LCLS-II accelerator. Using an angle-resolving electron time-of-flight spectrometer, we perform angular streaking measurements with high energy and angular resolution, enabling a complete reconstruction of the spatial and temporal profiles of the pulses. These measurements showcase the attosecond science capabilities of LCLS-II at unprecedented repetition rates and provide the foundation for controlling and shaping x-ray pulses to study ultrafast dynamics in complex systems with precision.

Please consider my poster for contributed oral presentation

Yes

Would you like to submit this poster in student poster session on Sunday (August 10th)

Yes

Footnotes

Funding Agency

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I have read and accept the Privacy Policy Statement

Yes

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