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# Attosecond research at the Linac Coherent Light Source

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Attosecond X-ray free-electron lasers can deliver isolated sub-fs pulses with a peak power that surpasses conventional table-top sources by more than six orders of magnitude in the soft X-ray region [1]. The intensity at the focus is sufficient for non-linear X-ray spectroscopy methods, and two-color configurations enable applications such as attosecond pump/attosecond probe experiments.

I will discuss the development of attosecond XFELs at the Linac Coherent Light Source: from the demonstration of isolated soft X-ray pulses with the XLEAP project, to the recent development of terawatt-scale pulses and attosecond pump/probe capabilities. I will also present our plans for attosecond science with the LCLS-II linac, which will enhance the available repetition rate by up to four orders of magnitude (up to 1 MHz [2]).

#### Footnotes

- [1] J. Duris et al. Nat. Photonics 14.1 (2020): 30-36.
- [2] P. Abbamonte et al. SLAC-R-1053. 2015.

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