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X-ray Cavity Based XFELS

Tuesday 12 August 2025 09:30 (30 minutes)

Cavity-based X-ray free-electron lasers present a promising path toward fully coherent, high-brightness X-ray sources with enhanced stability and spectral purity. By using Bragg-reflecting crystal cavities to recirculate and amplify an X-ray seed pulse over multiple passes, CBXFELs offer the potential for orders-of-magnitude improvements in coherence and brightness compared to single-pass FELs. This talk will present an overview of the CBXFEL concept and the proof-of-principle experiment currently under development at SLAC. Recent progress will be presented, along with ongoing efforts in beam–X-ray overlap diagnostics and cavity alignment. The talk will also address the key technical challenges ahead for CBXFELs and briefly explore alternative cavity-based XFEL designs as promising paths forward.

Please consider my poster for contributed oral presentation

No

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

No

Footnotes

Funding Agency

I have read and accept the Privacy Policy Statement

Yes

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