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CBXFEL design, production, assembly, testing and installation status

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Use of a cavity-based X-ray free electron laser (CBXFEL) is potentially a way to dramatically improve the stability and coherence of existing XFELs. A proof-of-principle project is underway as a collaboration between SLAC National Accelerator Laboratory, Argonne National Laboratory (ANL), and The Institute of Physical and Chemical Research in Japan (RIKEN). The CBXFEL is expected to operate using 9.831 keV photons from LCLS, using synthetic diamonds as cavity Bragg mirrors. The LCLS copper linac will deliver two electron bunches 624 RF buckets apart, resulting in a total X-ray cavity length of 65500.87 mm. The final X-ray cavity design, assembly, testing, and installation and production status will be presented.

Footnotes

Funding Agency

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