Contribution ID: **130** Contribution code: **TUP62**   Type: **Contributed Poster**

Control of the Longitudinal Phase and Benchmarking to HBSASE

Tuesday, 23 August 2022 17:40 (20 minutes)

Improvement of the longitudinal coherence in the proposed Soft Xray FEL, the SXL, for the MAX IV Laboratory is an important design aspect to enhance the user case. One of the main considered methods is HBSASE. However the final compression in the MAX IV acceleratos is done at full energy, and thus leaving an energy chirp in the electron pulse. This chirp in longitudinal phase space has to be removed for an efficient implementation of HBSASE. In this paper we show in simulations how the phase space is improved by first overcompressing the pulse, and then correct it by a two-plate wake field de-chirper. The resulting pulse is then shown to have qualities such that, by HBSASE, a significant narrowing of the FEL bandwidth is achieved at 1 nm.

I have read and accept the Privacy Policy Statement

Yes

Primary authors: CURBIS, Francesca (Lund University); POP, Mihai (MAX IV Laboratory); WERIN, Sverker (MAX IV Laboratory); PIRANI, Saeid (Lund University)

Presenters: CURBIS, Francesca (Lund University); POP, Mihai (MAX IV Laboratory); WERIN, Sverker (MAX IV Laboratory); PIRANI, Saeid (Lund University)

Session Classification: Tuesday posters

Track Classification: Seeded FEL