

Contribution ID: 68 Contribution code: TUP69

Type: Contributed Poster

High Repetition Rate Seeded Free-Electron Laser with a Harmonic Optical Klystron in High-Gain Harmonic Generation

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

External seeding techniques like high-gain harmonic generation (HGHG) and echo-enabled harmonic generation (EEHG) have been proven to be able to generate fully coherent radiation in the EUV and X-ray range. However, towards seeding at a high repetition rate, the repetition rate of current laser systems with sufficient power for seeding is limited to the kilohertz range. One attractive solution to this limitation is to reduce the required seed laser power. In this contribution, we will present a harmonic optical klystron scheme with high gain harmonic generation. With the harmonic optical klystron scheme as the seeding technique, the required seed laser power is decreased, and higher harmonics than in a standard single-stage HGHG can be achieved.

I have read and accept the Privacy Policy Statement

Yes

Primary authors: SUN, Hao (Shanghai Institute of Applied Physics); PARASKAKI, Georgia (Deutsches Elektronen-Synchrotron); FAATZ, Bart (Shanghai Advanced Research Institute); FENG, Chao (Shanghai Advanced Research Institute); LIU, Bo (Shanghai Advanced Research Institute)

Presenters: SUN, Hao (Shanghai Institute of Applied Physics); PARASKAKI, Georgia (Deutsches Elektronen-Synchrotron); FAATZ, Bart (Shanghai Advanced Research Institute); FENG, Chao (Shanghai Advanced Research Institute); LIU, Bo (Shanghai Advanced Research Institute)

Session Classification: Tuesday posters

Track Classification: Seeded FEL