

Application for the student session

Presentation title:

Improving the performance of an ultra-short soft x-ray free-electron laser via attosecond afterburners

Abstract:

Attosecond afterburners are implemented into an ultra-short soft x-ray free electron laser (FEL) to improve the performances on attosecond pulse generation. In this scheme, the FEL pulse produced in normal radiator section is dumped while the well-bunched electron beam is reserved and reused in the following afterburners. Consequently, the radiation in the afterburner gains rapidly as the bunching factor in the current spike is large, making the radiation pulse much shorter and cleaner than that from the normal radiator. Muli-shot simulations have been conducted to demonstrate the performance and stability of the proposed technique. I will introduce the scheme and the results of the simulations in the student session.

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