

Inverse-Free-Electron Laser Accelerators for Advanced Light Sources

Wednesday, 5 June 2013 12:10 (30 minutes)

In this talk I will discuss the Inverse Free Electron Laser scheme as a compact high gradient accelerator solution for driving advanced light sources such as soft x-ray free-electron laser amplifiers. We will present recent results from two different IFEL acceleration experiments, one carried out at BNL using a CO₂ driver laser and a helical geometry and the other one at LLNL using a high power short pulse Ti:Sa laser system. These experiments demonstrate the feasibility of achieving GV/m gradients and GeV beam energies with the IFEL scheme. The optically microbunched output of the IFEL accelerator well matches the requirement for a modelocked FEL capable of generating attosecond pulse trains.

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