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Nanometer-class longitudinally bunched beams in the AWA emittance exchange beamline

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The emittance exchange (EEX) beamline provides a unique capability in transferring transverse beam density modulation into longitudinal bunching. This process can be advantageous for rapidly starting the FEL process reducing the effective length of the undulators. We investigate the feasibility of creating nanometer-scale longitudinal density modulation at the Argonne Wakefield Accelerator. We particularly focus on the case of 800 nm bunching, and subsequent radiation generation.

Footnotes

Funding Agency

Primary author: HA, Gwanghui (Northern Illinois University)

Co-authors: Dr HALAVANAU, Aliaksei (SLAC National Accelerator Laboratory); CARLSTEN, Bruce (Los Alamos National Laboratory); ANDONIAN, Gerard (University of California, Los Angeles); ROSENZWEIG, James; Mr PARRACK, John (University of California, Los Angeles); POWER, John (Argonne National Laboratory); Dr YADAV, Monika (University of California, Los Angeles); MAJERNIK, Nathan (SLAC National Accelerator Laboratory)

Presenter: Dr HALAVANAU, Aliaksei (SLAC National Accelerator Laboratory)

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