The Beams and Applications Seminar Series

Beam dynamics studies for the Berkeley LUX dual-injector complex

Steve Lidia (LBL)

Bldg. 401, Room B4100
Monday, April 7, 1:30 PM

(note the special day and location)

Host: Kwang-Je Kim

The LUX (Linac-based Ultrafast X-ray source) proposed by Berkeley Lab is a recirculating linac concept for production of high rep-rate, femtosecond-class, tunable x-rays. A novel compression scheme allows production of ultrashort hard x-rays (1-12 keV) from conventional insertion devices using spontaneous radiation driven by a flat (ulta-low vertical emittance) electron beam. EUV and soft x-rays (~20-1000 eV) are produced from cascaded high-gain harmonic generation (HGHG) FEL scheme using a round, low emittance beam. A dual-injector complex with two rf photoinjectors feeding a single linac is envisioned to provide the beams with requisite quality. I will discuss beam dynamics issues in the production of the flat and round beams, and the joint optimization of the photoinjectors with the remainder of the injector systems. I also outline parallel efforts at Fermilab (A0/FNPL) to produce and characterize high quality flat beams.

For more information visit

http://www.aps.anl.gov/asd/physics/seminar.html

Visitors from off-site please contact John Power
(jp@anl.gov, 630-252-3191) to arrange for a gate pass.

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