

ACCELERATOR SEMINAR

“Coherent Synchrotron Radiation in the Cornell ERL”

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Coherent Synchrotron Radiation (CSR) can be a detrimental effect on particle bunches with high charge and short bunch lengths. CSR can contribute to an increase in emittance and energy spread, and can limit the process of bunch compression. It is especially important in Energy Recovery Linacs (ERLs), because any energy spread induced at high energy is magnified after deceleration, and any energy lost by the particles is energy that cannot be recovered. This talk will present CSR simulation results using the particle tracking code BMAD for all of the operating modes in the proposed Cornell ERL, including the bunch compression mode. These simulations consider the effect of CSR shielding, as well as CSR propagation between bends. Additionally, an exact 1D model for computing the longitudinal CSR wakefield will be introduced.

**Thursday, November 4, 2010
3:30 p.m. – 4:30 p.m.
CEBAF Center, Room L102/104**

Coffee before seminar beginning at 3:00 p.m.