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Longitudinal bunch shaping and optimization of the FAST injector

Tuesday, 9 May 2023 16:30 (2 hours)

The FAST Injector at Fermilab has been the focus of a number of recent experimental efforts as 1) the driver of a novel FEL experiment, 2) as the injector for IOTA, and 3) as a test-bed for novel machine learning algorithms to reconstruct phase space measurements. Here we present our recent work to simulate the FAST injector and perform realistic comparisons of simulated beam distributions to measured beam distributions using a multi-slit emittance diagnostic. We also present studies on using laser pulse stacking to shape the beam distribution for creating optimal current distributions for FEL experiments.

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Footnotes

I have read and accept the Privacy Policy Statement

Yes

Primary author: COLEMAN, Stephen (RadiaSoft LLC)

Co-authors: MUROKH, Alex (RadiaBeam Technologies); FISHER, Andrew (Particle Beam Physics Lab (PBPL)); HALL, Christopher (RadiaSoft LLC); CROPP V, Frederick (Eric) (Particle Beam Physics Lab (PBPL)); EDELEN, Jonathan (RadiaSoft LLC); KRAVCHENKO, Maksim (RadiaBeam); BURGER, Nathan (University of California, Los Angeles); MUSUMECI, Pietro (University of California, Los Angeles)

Presenter: COLEMAN, Stephen (RadiaSoft LLC)

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