Contribution ID: **1890** Contribution code: **WEPA079** Type: **Poster Presentation**

Simulations of radiation reaction in inverse Compton scattering

Wednesday, 10 May 2023 16:30 (2 hours)

The effect of radiation reaction is often negligible in inverse Compton scattering. However, in the nonlinear Compton regime, at high laser fields and high electron beam energies where electron recoil must be properly accounted for, there is experimental data which demonstrates the onset of radiation reaction * . We model the radiation reaction as a series of emissions from individual electrons with decreasing energy. This allows us to use the code we previously developed for simulating single-emission inverse Compton scattering events ** . We use the new code to simulate the experiment reported in Cole et al. 2018, and to compare it to other models of radiation reaction.

Funding Agency

This work was supported by US NSF CAREER grant # 184771

Footnotes

- Cole et al. 2018, PRX 011020 ** Terzic et al. 2019, EPL 126, 12003

I have read and accept the Privacy Policy Statement

Yes

Primary author: BREEN, Elizabeth (Old Dominion University)

Co-authors: ROGERS, Emerson (Old Dominion University); JOHNSON, Erik (Old Dominion University); KRAFFT, Geoffrey (Thomas Jefferson National Accelerator Facility); TERZIC, Balsa (Old Dominion University)

Presenter: BREEN, Elizabeth (Old Dominion University)

Session Classification: Wednesday Poster Session

Track Classification: MC5: Beam Dynamics and EM Fields: MC5.D11: Code Developments and Simulation Techniques