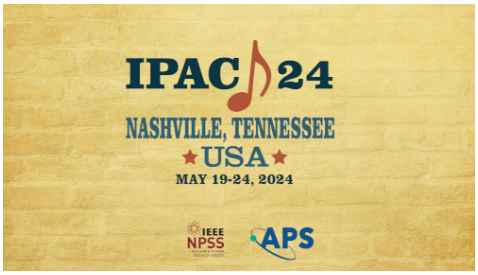

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Computational simulations and beamline optimizations for an electron beam degrader at CEBAF

Monday, 20 May 2024 16:00 (2 hours)

An electron beam degrader is under development with the objective of measuring the transverse and longitudinal acceptance of the Continuous Electron Beam Accelerator Facility (CEBAF) at Jefferson Lab. This project is in support of the CE+BAF positron capability. Computational simulations of beam-target interactions and particle tracking were performed integrating the GEANT4 and Elegant toolkits. A solenoid was added to the setup to control the beam's divergence. Parameter optimization of the solenoid field and magnetic quadrupoles gradient was also performed to further reduce particle loss through the rest of the injector beamline.

Footnotes

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