Contribution ID: **1336** Contribution code: **MOPS126** Type: **Poster Presentation**

Current status of conceptual horizontal splitter design for FFA@CEBAF energy Uugrade

Monday 2 June 2025 16:00 (2 hours)

Jefferson Lab's Continuous Electron Beam Accelerator Facility (CEBAF) is currently investigating the feasibility of upgrading its maximum operating energy using Fixed-Field Alternating-gradient (FFA) recirculating arcs to increase the total number of recirculations the beam through the pair of LINACs. These FFA arcs will be composed of permanent magnets, with small Panofsky-style multipole correctors. In order to control the beam parameters through these FFA arcs, horizontal splitters must be used. The geometrical and physical constraints, as well as the beam matching requirements are very restrictive, complicating the design. This work will show the current status of the most mature design, which includes matching solutions, as well as options for extraction of the beam.

Footnotes

Paper preparation format

LaTeX

Region represented

America

Funding Agency

Authored by Jefferson Science Associates, LLC under U.S. DOE Contract No. DE-AC05-06OR23177.

Author: BODENSTEIN, Ryan (Thomas Jefferson National Accelerator Facility)

Co-authors: COXE, Alexander (Jefferson Lab); GAMAGE, Bamunuvita (Thomas Jefferson National Accelerator Facility); FREEMAN, Brian (Thomas Jefferson National Accelerator Facility); KHAN, Donish (Thomas Jefferson National Accelerator Facility); BENESCH, Jay (Thomas Jefferson National Accelerator Facility); PRICE, Katheryne (Thomas Jefferson National Accelerator Facility); DEITRICK, Kirsten (Thomas Jefferson National Accelerator Facility); KAZIMI, Reza (Thomas Jefferson National Accelerator Facility)

Presenter: BODENSTEIN, Ryan (Thomas Jefferson National Accelerator Facility)

Session Classification: Monday Poster Session

Track Classification: MC1 :Colliders and Related Accelerators: MC1.A12 Fixed Field Accelerators (FFAs)