Contribution ID: **421** Type: **Poster Presentation**

Design update on the transition beamline for the CEBAF Energy Upgrade

For Jefferson Lab's 22¿GeV upgrade, two new permanent-magnet Fixed-Field Alternating Gradient (FFA) arcs will be integrated to serve the accelerator's six highest-energy recirculation passes. Connecting these FFA arcs to the existing linear accelerator (linac) requires a carefully engineered transition section. The current design has two parts where the first part adiabatically matches the beam dispersion and orbit trajectories, while the second part aligns the Twiss parameters (alpha and beta functions) with those at the linac entrance. Given the tight spatial constraints and multiple matching requirements, a genetic algorithm is being explored to optimize the beam optics matching. This paper presents the current progress in developing and optimizing this transition.

Please consider my poster for contributed oral presentation

No

Would you like to submit this poster in student poster session on Sunday (August 10th)

No

Footnotes

Funding Agency

Jefferson Science Associates, LLC under U.S. DOE Contract DE-AC05-06OR23177, Brookhaven Science Associates, LLC, Contract DE-SC0012704

I have read and accept the Privacy Policy Statement

Yes

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Session Classification: MC5

Track Classification: MC5 –Beam Dynamics and EM Fields