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Multi-GeV FFA Beam Transport Test at CEBAF

Thursday 14 August 2025 16:00 (2 hours)

Jefferson National Lab plans an upgrade project to reach 22 GeV high polarization electron beam by using Fixed Field Alternating-gradient (FFA) magnets. The utilization of the FFA magnets for 10-22 GeV beam energy range is unexampled, therefore those magnets need an experimental validation before their full installation to form an arc in the Continuous Electron Beam Accelerator Facility (CEBAF). For this reason, JLAB is also considering the design of an FFA magnet test bench, i.e. a half or full FFA cell, that would be deployed in the current CEBAF in order to serve as the highest energy demonstration for the FFA field uniformity, permanent magnet resiliency with the beam as well as enabling beam optics measurements with the 5-11 GeV range highly polarized beams which closely resembles the full energy range of the 22 GeV upgrade. In this report, we present the status of the planned beamline for the FFA beam transport test at CEBAF.

Please consider my poster for contributed oral presentation

Yes

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

No

Footnotes

Funding Agency

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Yes

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