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# Status of error correction studies in support of FFA@CEBAF

*Monday, 8 May 2023 16:30 (2 hours)*

In this work, we examine the beam correction requirements for the FFA@CEBAF energy upgrade. Both hardware and software diagnostic and corrector components are under investigation; in particular the relationship between hardware and software optimization will be developed. To generate a representative sample of errors—from the machine lattice and other beam properties—we construct a Markov Chain Monte Carlo (MCMC) sampler which considers different probability distributions for different types of errors. This sample is used to investigate the statistical sensitivity of the beam to various diagnostic and corrective schema. Once statistics are acquired, we plan to use a variety of optimization techniques to minimize correction time for the electron beam in the FFA arcs designed for the CEBAF upgrade.

## Funding Agency

## Footnotes

## I have read and accept the Privacy Policy Statement

Yes

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