

## Degrader beamline design at the CEBAF injector for machine acceptance studies

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A bypass beamline is being built at the CEBAF injector to degrade the electron beam phase space for machine acceptance studies. The electron beam is degraded through multiple scattering in a thin target before returning to the injector beamline for injection into CEBAF. The degraded electron beam will approximate phase space distributions expected from a bremsstrahlung-based polarized positron source as in the PEPPo [1] method. The effort is in broader support of the Ce+BAF positron capability [2] that is currently under study. The degrader beamline design and simulation results will be presented.

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### References

[1] D. Abbott, et al., “Production of highly polarized positrons using polarized electrons at MeV energies”, *Phys. Rev. Lett.* **116** (2016) 214801. doi:10.1103/PhysRevLett.116.214801.

[2] J. Grames, “Ce+BAF : Polarized and Unpolarized Positron Beam Capability at CEBAF 12 GeV”, this conference.