

5 MeV Mott polarimetry at MESA

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Abstract

Parity-violating experiments like P2 at Mainz Energy-Recovering Superconducting Accelerator (MESA) demand accuracy of polarization measurement of $\Delta P/P < 1\%$. To ensure electron beam polarization, a polarimetry chain with polarimeters at different energies is planned. This will help to track the beam polarization throughout the MESA lattice. A 5 MeV Mott polarimeter is planned as a part of the chain. This polarimeter is planned to run parallel to the Moller polarimeter and P2 experiment to cross-validate the polarimeters and ensure the beam polarization at the experiment. The parallel run is possible with the fast kicker, which can kick the beam at different duty factors.