

Abstract Submitted
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A GPU Accelerated Simulation Program for Electron Cooling Process¹ HE ZHANG, Jefferson Lab, HE HUANG, Old Dominion University, RUI LI, JIE CHEN, Jefferson Lab, LI-SHI LUO, Old Dominion University — Electron cooling is essential to achieve high luminosity in the medium energy electron ion collider (MIEC) project at Jefferson Lab. Bunched electron beam with energy above 50 MeV is used to cool coasting and/or bunched ion beams. Although the conventional electron cooling technique has been widely used, such an implementation in MEIC is still challenging. We are developing a simulation program for the electron cooling process to fulfill the need of the electron cooling system design for MEIC. The program simulates the evolution of the ion beam under the intrabeam scattering (IBS) effect and the electron cooling effect using Monte Carlo method. To accelerate the calculation, the program is developed on a GPU platform. We will present some preliminary simulation results.

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