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IMPACT-T simulation for the latest coherent electron cooling pop experiment

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This paper presents the results of the IMPACT-T simulation conducted for the latest iteration of the Coherent Electron Cooling (CeC) Pop Experiment at Brookhaven National Laboratory (BNL). The CeC experiment aims to demonstrate the principles of CeC, a rapid cooling technique designed for high-energy hadron beams. In addition to presenting simulation results for the current lattice parameters, this paper includes a discussion of previous benchmarking results obtained from IMPACT-T simulations and real CeC experiments. These comprehensive simulations not only facilitate the fine-tuning of CeC lattice parameters but also offer insights into the ongoing performance enhancements, all aimed at achieving exceptional beam quality.

Footnotes

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