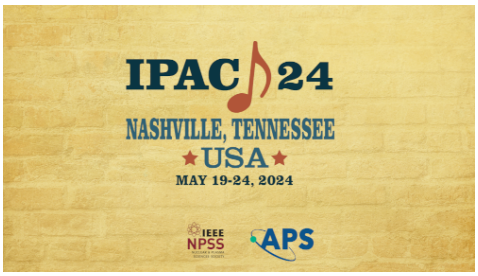

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Bmad based particle tracking simulation for slow resonant extraction

Tuesday, 21 May 2024 16:00 (2 hours)

Slow resonant extraction plays a crucial role in delivering a high-quality continuous beam to experiments. Simulating extraction and transport of charged particle beams require a process of careful modeling and experimentation. There are various particle tracking simulation tools available to use. Each has its merits and deficiencies. In this work we have used long-term tracking based on the Bmad toolkit to run third integer resonant extraction simulations of beams of various ion species in the booster synchrotron at Brookhaven National Laboratory. In this paper, we will present results of detailed slow extraction, multi-particle tracking simulations, and we will describe the features that make Bmad a useful tool for this work. We will show comparisons to other simulation tools of our results.

Footnotes

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Primary author: DHITAL, Bhawin (Brookhaven National Laboratory)

Co-authors: SAGAN, David (Cornell University (CLASSE)); HAMWI, Eiad (Cornell University (CLASSE)); HOFFSTAETTER, Georg (Cornell University (CLASSE)); BROWN, Kevin (Brookhaven National Laboratory); LIN, Weijian (Cornell University (CLASSE))

Presenter: HAMWI, Eiad (Cornell University (CLASSE))

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