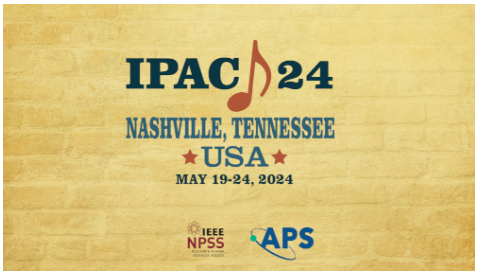

Contribution ID: **1840** Contribution code: **THPR35** Type: **Poster Presentation**

Optimizing non linear kicker injection parameters using machine learning

Thursday, 23 May 2024 16:00 (2 hours)

Synchrotron light source storage rings aim to maintain a continuous beam current without observable beam motion during injection. One element that paves the way to this target is the non-linear kicker (NLK). The field distribution it generates poses challenges for optimizing the topping-up operation. Within this study, a reinforcement learning agent was developed and trained to optimize the NLK operation parameters. We present the models employed, the optimization process, and the achieved results.

Footnotes

Funding Agency

Paper preparation format

Region represented

Europe

Primary author: SCHÜTT, Alexander (Munich University of Technology)

Co-authors: KNOCHENHAUER, Christoph (Technical University of Munich); MCATEER, Meghan (Helmholtz-Zentrum Berlin für Materialien und Energie GmbH); SCHNIZER, Pierre (Helmholtz-Zentrum Berlin für Materialien und Energie GmbH)

Presenter: SCHÜTT, Alexander (Munich University of Technology)

Session Classification: Thursday Poster Session

Track Classification: MC4: Hadron Accelerators: MC4.T12 Beam Injection/Extraction and Transport