



Contribution ID: 1981 Contribution code: MOPG05

Type: **Poster Presentation**

Low-alpha operation of the IOTA storage ring

Monday, 20 May 2024 16:00 (2 hours)

Operation with ultra-low momentum-compaction factor (α) is a desirable capability for many storage rings and synchrotron radiation sources. For example, low-alpha lattices are commonly used to produce picosecond bunches for the generation of coherent THz radiation and are the basis of a number of conceptual designs for EUV generation via steady-state microbunching (SSMB). Achieving ultra-low alpha requires not only a high-level of stability in the linear optics but also flexible control of higher-order compaction terms. Operation with lower momentum-compaction lattices has recently been investigated at the IOTA storage ring at Fermilab. Experimental results from some initial feasibility studies will be discussed in the context of ensuring an improved understanding of the IOTA optics for future research programs.

Footnotes

Funding Agency

This manuscript has been authored by Fermi Research Alliance, LLC under Contract No. DE-AC02-07CH11359 with the U.S. Department of Energy, Office of Science, Office of High Energy Physics.

Paper preparation format

LaTeX

Region represented

North America

Primary author: WALLBANK, Michael (Fermi National Accelerator Laboratory)

Co-authors: ROMANOV, Alexander (Fermi National Accelerator Laboratory); STANCARI, Giulio (Fermi National Accelerator Laboratory); JARVIS, Jonathan (Fermi National Accelerator Laboratory); EDDY, Nathan (Fermi National Accelerator Laboratory)

Presenter: JARVIS, Jonathan (Fermi National Accelerator Laboratory)

Session Classification: Monday Poster Session

Track Classification: MC2: Photon Sources and Electron Accelerators: MC2.A04 Circular Accelerators