Contribution ID: **535** Contribution code: **MOPA144** Type: **Poster Presentation**

Scaling of hybrid multi bend lattice cells

Monday, 8 May 2023 16:30 (2 hours)

The hybrid multi bend (HMBA) lattice has been introduced to the accelerator community with the ESRF-EBS storage ring. Scaling an HMBA storage ring (SR) to different number of cells or cell length may lead to loss of performances, in terms of dynamic aperture (DA), momentum acceptance (MA) and natural horizontal emittance of the resulting SR. In this article we present several (non-exhaustive) scaling rules that guarantee minimal performance loss. A comparison of lattice cells with varying number of dipoles shows that the H6BA cell* outperforms other layouts in both, DA and MA, while a larger number of dipoles per cell is required to produce the lowest emittance.

Funding Agency

Footnotes

- Toward a diffraction limited light source, P.Raimondi, S.Liuzzo, submitted to PRAB Oct 2022.

I have read and accept the Privacy Policy Statement

Yes

Primary authors: LIUZZO, Simone (European Synchrotron Radiation Facility); BLANCO-GARCÍA, Oscar (Synchrotron Soleil); RAIMONDI, Pantaleo (European Synchrotron Radiation Facility)

Co-authors: CARMIGNANI, Nicola (European Synchrotron Radiation Facility); CARVER, Lee (European Synchrotron Radiation Facility); HOUMMI, Lina (European Synchrotron Radiation Facility); PERRON, Thomas (European Synchrotron Radiation Facility); WHITE, Simon (European Synchrotron Radiation Facility)

Presenter: LIUZZO, Simone (European Synchrotron Radiation Facility)

Session Classification: Monday Poster Session

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