



Contribution ID: 1814 Contribution code: MOPA064

Type: **Poster Presentation**

Bayesian optimization of the dynamic aperture in UVSOR-IV design study

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

A lattice of a storage ring for the future plan of UVSOR synchrotron facility, UVSOR-IV, is designed at 1 GeV electron energy. The lattice of 12 compact double achromat cells conducts to an emittance of 4.2 nm at 1 GeV electron energy and 2.3 nm at 750 MeV electron energy in achromat condition, 82.5 m circumference, and six straight sections of 4 m long and six of 1.5 m long. The lattice has the flexibility of beta function and dispersion function at the straight sections which can produce lower emittance in the non-achromatic condition and short bunch length in isochronous condition. The lattice requires strong sextupole magnets to compensate the natural chromaticity. To help deal with the challenge of dynamic aperture associated with strong nonlinearities, we examined optimizing the dynamic aperture with the sextupole arrangement based on the Bayesian method. In the conference, the latest results from the design study will be reported.

Funding Agency

Footnotes

I have read and accept the Privacy Policy Statement

Yes

Primary author: SALEHI, Elham (UVSOR Facility)

Co-author: KATOH, Masahiro (Hiroshima Synchrotron Radiation Center)

Presenter: KATOH, Masahiro (Hiroshima Synchrotron Radiation Center)

Session Classification: Monday Poster Session

Track Classification: MC1: Colliders and other Particle Physics Accelerators: MC1.A24: Accelerators and Storage Rings, Other