Contribution ID: **1893** Contribution code: **WEPM103** Type: **Poster Presentation**

Studies on the large residual horizontal orbit in the SIRIUS booster

Wednesday 4 June 2025 16:00 (2 hours)

SIRIUS, the Brazilian 4th-generation synchrotron light source, operates in top-up mode at a current of 200 mA. Despite previous optimizations, the storage ring injection system still requires improvements in efficiency, to attend the tight demands in terms of repeatability and charge per pulse. In this context, this work investigates the large residual horizontal orbit distortion in the booster, that cannot be corrected with the current orbit correction system. A method to mitigate the problem, based on displacing focusing quadrupoles horizontally will be analyzed. Additionally, a hypothesis to explain the origin of the distortion, based on dipole error correlations introduced by the magnet sorting algorithm, will be investigated.

Footnotes

Paper preparation format

LaTeX

Region represented

America

Funding Agency

Authors: DE SÁ, Fernando (Brazilian Synchrotron Light Laboratory); SILVEIRA, Otávio (Brazilian Synchrotron Light Laboratory)

Presenter: SILVEIRA, Otávio (Brazilian Synchrotron Light Laboratory)

Session Classification: Wednesday Poster Session

Track Classification: MC5: Beam Dynamics and EM Fields: MC5.D01 Beam Optics Lattices, Correction Schemes, Transport