Contribution ID: **668** Contribution code: **WEPB089** Type: **Poster Presentation**

Permanent magnet version of longitudinal gradient bending magnet for Korea-4GSR Project

Wednesday 4 June 2025 16:00 (2 hours)

A 4th generation storage ring based light source is being developed in Korea since 2021. It features <60 pm rad intrinsic beam emittance, about 800 m circumference, 4 GeV e-beam energy, full energy booster injection, and more than 40 beamlines which includes more than 24 insertion device (ID) beamlines. To optimize the beam emittances, longitudinal gradient bending magnet is applied in the storage ring design. The initial design was using conventional electrical excitation, but the design is changed to use permanent magnet (Sm2Co17) to minimize energy costs. In this report, the physics design and prototyping is described including field integral, field tuning, and temperature compensation scheme.

Footnotes

Paper preparation format

LaTeX

Region represented

Asia

Funding Agency

Author: KIM, Beom Jun (Pohang Accelerator Laboratory)

Co-authors: KIM, Dong Eon (Pohang Accelerator Laboratory); HAHN, Garam (Pohang Accelerator Laboratory); CHUN, Inwoo (Pohang Accelerator Laboratory); JUNG, YoungGyu (Pohang Accelerator Laboratory)

Presenter: KIM, Beom Jun (Pohang Accelerator Laboratory)

Session Classification: Wednesday Poster Session

Track Classification: MC7: Accelerator Technology and Sustainability: MC7.T09 Normal Conducting Magnets