Contribution ID: **123** Type: **Poster**

# Eddy current effect in a booster ring of Korea-4GSR

*Thursday, November 14, 2024 1:00 PM (1h 30m)*

Since the strength of the booster magnets changes during the energy ramping process, it creates the inevitable eddy currents in a metal chamber. The eddy current generates a relatively weak sextupole-field component but causes a non-negligible effect due to the significantly long physical length of the bending magnet. These effects can be estimated as chromaticity by integrating the time-varying sextupole components in the case of variable separation between each axis valid. The change of the chromaticity introduces the dynamic aperture reduction, resulting in crucial beam loss, so it demands a precise evaluation with 6D simulation. In this presentation, we will present the result of 6D simulations and the methods we used to calculate chromaticity.

## Paper submission Plan

Yes

## Best Presentation

No

## Contribution track

ICABU WG2. Beam Physics, Diagnostics & Novel Techniques

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