

# Updates of Korea-4GSR impedance modeling and instability studies

Thursday, November 14, 2024 3:10 PM (20 minutes)

The small vacuum apertures in the 4th generation storage ring contribute significantly to beam instabilities, primarily caused by impedance. These instabilities are directly influenced by the bunch charge, which imposes a constraint on the maximum achievable beam current. The Korea-4th Generation Storage Ring (Korea-4GSR), currently under construction, aims to achieve a beam current of 400 mA. To reach this target, we have carried out comprehensive estimations and optimizations of the impedance in the current storage ring. In this presentation, we will discuss the impedance characteristics of the Korea-4GSR and analyze the associated beam instabilities.

## Paper submission Plan

No

## Best Presentation

No

## Contribution track

ICABU WG2. Beam Physics, Diagnostics & Novel Techniques

**Primary author:** SEOK, Jimin (PAL)

**Co-authors:** Dr JANG, Gyeongsu (PAL); Mr CHOI, Hosun (PAL); KIM, Jaehyun (Pohang Accelerator Laboratory (PAL)); LEE, Jaeyu (Pohang Accelerator Laboratory); HA, Taekyun (Pohang Accelerator Laboratory (PAL))

**Presenter:** SEOK, Jimin (PAL)

**Session Classification:** ICABU WG2

**Track Classification:** ICABU: ICABU WG2. Beam Physics, Diagnostics & Novel Techniques