

Development of High-Precision Beam Position Monitor for the Korea-4GSR project

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The Korean 4GSR project is currently under construction in Ochang, South Korea, with the aim of achieving first beam commissioning in 2027.

Designed to achieve an emittance approximately 100 times smaller than that of third-generation synchrotron radiation storage rings, the project requires the development of several high-precision beam diagnostic devices. In particular, the beam position monitor (BPM) is aimed at reducing longitudinal wake impedance to suppress heating and beam instability. This paper discusses the development of two types of 4GSR BPM pick-up antennas: one utilizing a SiO₂ glass insulator and another designed in a cone shape using Al₂O₃. We will also describe the performance of these designs through beam tests. Additionally, this paper provides an overview of the current development status of the BPM system for the 4GSR project.

Paper submission Plan

No

Best Presentation

No

Contribution track

ICABU WG2. Beam Physics, Diagnostics & Novel Techniques

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