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## Development of high-precision beam position monitor for the Korean 4GSR project

*Tuesday, 10 September 2024 16:00 (1h 30m)*

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. For this purpose, two types of 4GSR BPM pick-up antennas have been developed. The first utilizes a SiO<sub>2</sub> glass insulator, while the second is designed in a cone shape using Al<sub>2</sub>O<sub>3</sub>. The differences and advantages of the two designs are explained, and the performance obtained through actual beam tests will be described. This presentation will provide an overview of the current development status of the beam position monitor developed for the 4GSR project, including details on the approximate configuration of the 4GSR BPM system.

### Footnotes

### Funding Agency

### I have read and accept the Privacy Policy Statement

Yes

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