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Development of beam position monitor for korea 4GSR project

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The emittance of fourth-generation storage ring(4GSR) will be built in Cheongju-Ochang, Korea, is expected to be 100 times smaller than the existing third-generation storage ring. As the emittance decreases, more precise beam stabilization is required. To satisfy this, the resolution of the Beam Position Monitor (BPM) should also be further improved.
We have performed an optimization study of 4GSR BPM to minimize wake impedance and power dissipation in small size of 4GSR vacuum chamber. Moreover, The cut-off frequency of feed-through antenna was designed to be high by using a material with a low dielectric constant. As a result, the BPM output signal is fully decayed and supressed within a bunch interval of 2ns. In this presentation, we will describe that the more detailed current status of the design and development of the beam position monitor for Korea 4GSR.

Funding Agency

Footnotes

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