

4GSR Storage Ring Permanent Magnet Dipole(LGBM)

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The 4GSR storage ring in South Korea has an electron energy of 4 GeV and is composed of 28 cells. Each cell contains 4 longitudinal gradient bending magnets (LGBMs), with a total of 112 LGBMs arranged in the ring. All LGBMs are manufactured based on Sm₂Co₁₇ permanent magnets, requiring approximately 4 tons of permanent magnet material. Sm₂Co₁₇ was selected for its higher temperature stability compared to NdFeB, and the design also includes additional temperature compensation features. The magnetic field of the LGBM varies from 0.15 T to 0.73 T along a distance of approximately 2 meters in the electron beam path. Each LGBM consists of 5 independent dipoles, with different sizes and magnetic fields. This paper focuses on the parameters and mechanical design details of the LGBMs.

Paper submission Plan

Best Presentation

Contribution track

ICABU WG1. Accelerator Systems

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