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Development of an in-vacuum field measurement system for the non-linear injection kicker of the TPS storage ring

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The TPS storage ring utilizes a standard four-kicker bump off-axis injection system, which is known to cause disturbances to the stored beam during injections. To address this issue, an in-vacuum non-linear kicker has been developed. This kicker features zero B_x and B_y fields at its center and an off-axis B_y , providing a potential solution to facilitate top-off injection while minimizing oscillations of the stored beam.

To evaluate and optimize its performance, an in-vacuum field measurement system is required to characterize the magnetic field distributions at various applied currents. This paper presents the mechanical design, fabrication process, and initial field measurement results of the in-vacuum field measurement system.

Footnotes

Paper preparation format

Word

Region represented

Asia

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