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Design of a stripline BPM for CSNS-II injection upgrade

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The CSNS accelerator complex is upgrading the injection area to improve the beam-loss control during beam injection and acceleration in the Rapid Cycling Synchrotron. At CSNS, the linac beam energy will be increased from 80MeV to 300MeV employing a new superconducting accelerating section, and the beam power at the spallation target will be 500kW. To accomplish these requirements, a stripline-type BPM has been designed with a large aperture and 50 Ω stripline electrodes. This BPM has an inner diameter of 52 mm and is used to detect the beam with a current of 10-30 mA and a pulse width of 100-500us. Several geometrical and electrical parameters have been optimized with numerical simulation. This paper will describe the design and optimization of the stripline-type BPM in detail, and simulation results are discussed.

Footnotes

Funding Agency

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Yes

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