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Effects of chromaticity and space charge on coupled bunch instability in CSNS/RCS

Wednesday 4 June 2025 16:00 (2 hours)

Coupled bunch instability was observed during beam commissioning of CSNS/RCS. The instability was successfully suppressed by installing sextupoles to control chromaticity. The instability exhibits characteristics influenced by the strength of space charge. We conducted a theoretical study on the effects of chromaticity and space charge on coupled bunch instability and compared results with simulation and measurements. This work provides valuable insights for beam control in the second phase of CSNS.

Footnotes

Paper preparation format

Word

Region represented

Asia

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