Contribution ID: **2393** Contribution code: **SUPS015** Type: **Student Poster Presentation**

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

Sunday 1 June 2025 14:00 (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

Funding Agency

Author: RAO, Li (Institute of High Energy Physics)

Co-authors: LIU, Hanyang (Institute of High Energy Physics); HUANG, Liangsheng (Institute of High Energy Physics); XU, Shouyan (Dongguan Neutron Science Center)

Presenter: RAO, Li (Institute of High Energy Physics)

Session Classification: Student Poster

Track Classification: MC5: Beam Dynamics and EM Fields: MC5.D04 Beam Coupling Impedance Theory, Simulations, Measurements, Code Development