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Beam commissioning and upgrade considerations for the CSNS RCS

Tuesday, 21 May 2024 16:00 (2 hours)

For the China Spallation Neutron Source (CSNS), the rapid cycling synchrotron (RCS) accumulates and accelerates the injection beam to the design energy of 1.6 GeV and then extracts the high energy beam to the target. In this paper, firstly, the beam commissioning of the RCS have been comprehensively studied. In order to meet the requirements of beam power increase and stable operation of the CSNS accelerator, the RCS beam losses from different sources are studied and optimized. With the aid of weekly radiation dose measurement, the hot spots of the RCS are studied in depth to explore the causes and find the solutions. Secondly, for the CSNS-II, the upgrade of the RCS will be introduced and studied in detail. Based on the detailed simulation results, the upgrade scheme of the RCS will be given.

Footnotes

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Asia

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