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Recent Progress in RHIC Accelerator Science and Applications¹

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In the recent years, as the only operational collider in the US, the Relativistic Heavy Ion Collider (RHIC) has established several successful upgrade projects, which improved the luminosity as well as the polarization. These projects include 3D stochastic cooling, state of the art polarized proton source, new electron beam ion source, etc. In the meantime, ongoing research for “cooler” and brighter beam is planned to launch gradually in the next few years, e.g. 56 MHz SRF storage cavity, electron lens, proof-of-principle coherent electron cooling, etc.. In this paper, we will introduce the recent progress of RHIC accelerator science and applications, with highlights for some of the projects.

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