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The Relativistic Heavy Ion Collider

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Over the last 20 years, as the first hadron accelerator and collider consisting of two independent superconducting rings, the Brookhaven Relativistic Heavy Ion Collider (RHIC) has operated with a wide range of beam energies and particle species. With a number of facility upgrades that were based on focused accelerator R&D the performance in operational flexibility and reliability and luminosity production has consistently set records. This included an initial addition of the unique capability of accelerating and colliding 250 GeV polarized protons to study the spin structure of the proton and the first implementation of high energy bunched beam stochastic cooling resulting in record luminosities for heavy ion collisions. Recently the first bunched beam electron cooling was successfully commissioned at RHIC.