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Spin tune measurement for RHIC injection with an AC dipole

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The RHIC spin flipper consists of interleaved AC dipoles and DC dipoles to achieve high spin-flip efficiency at high energies. The sophisticated design aims to minimize beam oscillations outside the spin flipper. For spin tune measurements, the requirements are simpler. It has been shown that by using AC dipoles, one can sweep the AC dipole tune across the spin tune to depolarize the beam. By narrowing the sweep range of the driving tune, the spin tune can be located. This method was recently used to resolve the cause of the low polarization in one of the RHIC rings. This paper summarizes the setup and results.

Footnotes

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