

# Spin Flipping in RHIC \*

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## Abstract

At the Relativistic Heavy Ion Collider (RHIC), polarized protons will be accelerated and stored for spin physics experiments. Two full helical snakes will be used to eliminate the depolarization due to imperfection and intrinsic spin resonances. Since no resonances are crossed in RHIC, the beam polarization remains fixed through acceleration. However, in order to reduce systematic errors, the experiment often requires the polarization direction reversed. This paper presents a method of using an AC dipole to obtain a full spin flip in the presence of two full snakes. A similar method of using an rf solenoid for spin flip was tested at IUCF [1, 2].

## References

- [1] D.D.Caussyn et al., 'Spin Flipping a Stored Polarized Proton Beam', Phys. Rev. Lett. 73, 2857 (1994).
- [2] B.B.Blinov et al., 'Spin Flipping in the Presence of a Full Siberian Snake', Phy. Rev. Lett. 81, 2906 (1998).

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