



Contribution ID: 1217 Contribution code: TUOGB3

Type: **Contributed Oral Presentation**

Spin transparency experiment test in RHIC

Tuesday, 9 May 2023 12:10 (20 minutes)

A novel technique, called a spin transparency mode, for preservation and control of electron and ion spin polarization in colliders and storage rings has been proposed. The beam polarization can then be fully controlled by small adjustments of the snake axis orientations and snake strengths. An experiment has been carried out recently to test the concept. One of the RHIC rings is set to be “transparent” to the spin by making the axes of its two Siberian snakes nearly parallel. The polarization was rotated from vertical to radial and from up to down by varying the snake currents. This paper summarizes the recent experiment results and discusses the comparison with simulations.

Funding Agency

Work supported by Brookhaven Science Associates, LLC under Contract No. DE-SC0012704 with the U.S. Department of Energy.

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Session Classification: MC01.1 - Colliders and other Particle Physics Accelerators (Contributed)

Track Classification: MC1: Colliders and other Particle Physics Accelerators: MC1.A01: Hadron Colliders