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Spin transparency experiment test in RHIC

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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.

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