

Abstract Submitted
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Neutral Beam Injection as a Tool for Momentum Transport Studies in MST¹ M.D. NORBERG, J.K. ANDERSON, D. LIU, J. WAKSMAN, University of Wisconsin-Madison and Center for Magnetic Self-Organization, G. FIKSEL, University of Rochester, A.A. IVANOV, V.I. DAVYDENKO, Budker Institute of Nuclear Physics, Novosibirsk, Russia — A new 1 MW Neutral Beam Injector is installed and in operation on MST. The deposition of fast hydrogen neutrals in the core of the reversed field pinch serves as an external source of momentum which can be used to study momentum transport. Viscous transport is inadequate to explain previous momentum transport measurements using a biased electrode to induce toroidal plasma rotation. Measurements of magnetic mode parallel velocity and impurity velocity show an increase in toroidal rotation during NBI in MST plasmas. Preliminary evidence suggests that in non-reversed plasmas the core resonant mode which normally slows the plasma due to an electromagnetic torque generated by wall currents is suppressed, resulting in longer periods of rotation. Examination of ensembles of core mode locking times confirm that while the plasma is rotating faster due to NBI, the torque balance is unchanged during locking.

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