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Kinetic Stress as a Flow Driver in the MST Reversed Field Pinch W.X. DING, D.L. BROWER, L. LIN, W.F. BERGERSON, University of California, Los Angeles, California, A. ALMAGRI, D.J. DEN HARTOG, J.A. REUSCH, J.S. SARFF, University of Wisconsin, Madison, Wisconsin — Self-generated or intrinsic parallel flows are routinely observed in the MST RFP where flow parallel to equilibrium magnetic field reverses sign at mid-radius. In the absence of external torque, the intrinsic flow may arise from residual stresses. Kinetic stress, the correlated product of parallel pressure and radial magnetic field fluctuations, has been measured by using a high-speed polarimetry-interferometry diagnostic (for both radial magnetic field and density fluctuations). Away from the sawtooth crash, it is found that the measured kinetic stress has the finite amplitude comparable to the change of flow in the core. This indicates that kinetic stress plays an important role in self-generated flow in high-temperature RFP plasmas. Work supported by US DOE and NSF.

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