

Abstract Submitted
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Simulations of MHD Dynamo With and Without the Reversal Surface D. MARTIN, D. CRAIG, Wheaton College, J.A. REUSCH, University of Wisconsin-Madison — Fluctuations in the Reversed Field Pinch (RFP) are dominated by Fourier mode numbers $m=0$ and $m=1$. The velocity and magnetic fluctuations drive a dynamo which redistributes current in the plasma. In experiments, $m=0$ modes and dynamo due to $m=1$ modes are highly dependent on the existence of the reversal surface in the plasma. We investigate the effects of reversal surface on magnetic and velocity fluctuations using a magnetohydrodynamic simulation to model the plasma with and without a reversal surface. We find that while $m=0$ modes are suppressed through the removal of the reversal surface, magnetic $m=1$ amplitudes are not affected. Velocity fluctuations for both modes decrease with the reversal surface removed. Work funded by USDOE.

David Martin
Wheaton College

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