Abstract Submitted
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**Modeling of lower-hybrid coupling in the Madison Symmetric Torus**[1] JOHAN CARLSSON, Tech-X Corporation, MARK CARTER, Oak Ridge National Laboratory, DAVE BURKE, JOHN GOETZ, MIKE KAUFMAN, JAY ANDERSON, University of Wisconsin-Madison — In Reversed-Field Pinches (RFPs) the magnetic- field configuration is sustained by the MHD dynamo whose magnetic fluctuations degrade the energy confinement. Inductive Pulsed Poloidal Current Drive (PPCD) has been shown to relax the MHD dynamo, reduce the magnetic fluctuation level and significantly increase the energy confinement time. To provide steady-state poloidal current drive, two different RF schemes are being evaluated in the Madison Symmetric Torus (MST) RFP: Electron Bernstein Wave (EBW) and Lower Hybrid (LH). The Oak Ridge RF codes RANT3D and AORSA1D-H have been adapted for LH waves in the RFP configuration. RFPs require a tightly fitting conducting shell for MHD stability. A waveguide grill would create unacceptable field errors and a launch structure entirely inside the conducting shell must be flat enough to fit in the approximately 2 cm vacuum layer between the shell and the plasma edge. The Inter-Digital Line (IDL) traveling-wave antenna meets these strict requirements. We will present preliminary simulation results of LH coupling with the IDL antenna in MST.

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