

Abstract Submitted  
for the DPP05 Meeting of  
The American Physical Society

**High Power Antenna Design for Lower Hybrid Current Drive in MST**<sup>1</sup> M.A. THOMAS, D.R. BURKE, J.A. GOETZ, M.C. KAUFMAN, S.P. OLIVA, University of Wisconsin–Madison — RF current drive has been proposed as a method for reducing the tearing fluctuations that are responsible for anomalous energy transport in the RFP. A system for launching lower hybrid slow waves at 800 MHz and  $n_{||} \approx 7.5$  is now in operation at 80 kW on MST. The antenna is an enclosed interdigital line using  $\lambda/4$  resonators with an opening in the cavity through which the wave is coupled to the plasma. Although present operation is limited by available transmitter power, a new antenna has been developed for higher power capability. Design improvements include larger vacuum feedthroughs, better impedance matching, and RF instrumentation on all resonators. Full instrumentation will allow more detailed power deposition measurements. The goal is a modular design which can handle 300 kW per antenna and presents a VSWR of 1.4 or better without external tuning.

<sup>1</sup>Work Supported by US DOE

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Date submitted: 20 Jul 2005

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