

Abstract Submitted  
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**Lower Hybrid Current Drive Experiments on MST**<sup>1</sup> M.C. KAUFMAN, J.A. GOETZ, D.R. BURKE, A.F. ALMAGRI, University of Wisconsin, Madison — Lower hybrid current drive has been offered as a means to reduce tearing fluctuations and improve confinement in the reversed field pinch. The third generation interdigital-line antenna has been installed in MST and preliminary testing has been completed. Source power to the antenna has been increased to >220kW in both feed directions. At high power, the  $n_{\parallel}$  spectrum has been measured and is peaked at  $\sim 7.5$  as expected with excellent directionality. Hard x-ray bremsstrahlung emission from rf-generated fast electrons with energies up to and beyond 60 keV has been observed using CdZnTe detectors. Emission in the co-current drive direction is toroidally localized in the plane of the antenna while the counter-current drive direction produces an order of magnitude less flux and peaks off-plane of the antenna. It is surmised that this localization results from diffusion of fast electrons away from a local current structure created by launch into low-confinement plasmas. Collimated x-ray emission profiles near the antenna will also be presented.

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