Abstract Submitted
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Equilibrium Profile Measurements of a Nineteen Gun Plasma Source[1] DAVID HANNUM, WILL BERGERSON, GENNADY FIKSEL, CARY FOREST, ROCH KENDRICK, STEVE OLIVA, JOHN SARFF, SAM STAMBLER, University of Wisconsin, Madison — The rotating wall machine is a linear screw-pinch built to study the role of different wall boundary conditions on the resistive wall mode (RWM). Its plasma is created by a hexagonal array of nineteen guns. The central seven guns can be biased to discharge up to 1 kA of current.[2] Different MHD instabilities are studied by changing the current and density profiles. At the other end of the 1.2-meter plasma column, a segmented anode yields a rough current profile measurement. Internal magnetic and Langmuir probes have measured radial profiles of q, T_e, n_e and Φ_p at the top and bottom of the plasma column. The profiles are seen to change from end to end. Additional probes are under construction to create a 3-D map of these parameters along the entire length of the column. This poster presents the radial profiles of q, T_e, n_e and Φ_p measured in different plasma configurations, and considers their implications on MHD stability and transport.

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[2]See the undergraduate poster on pulse width modulation by Stambler *et al*

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