

Plasma Properties in the Pegasus Edge Region¹ E.T. HINSON, M.W. BONGARD, R.J. FONCK, B.A. KUJAK-FORD, G.R. WINZ, University of Wisconsin-Madison — The plasma edge region in the PEGASUS ST exhibits: peeling modes at high j_{\parallel}/B ; broadband electrostatic turbulence; and strong deformation due to large-scale internal tearing modes. In addition, local helicity injection sources in the edge give rise to large current densities in the plasma scrapeoff, and potentially to a large non-axisymmetric edge current distribution. To address these issues, electrostatic and magnetic probes are deployed to measure the edge characteristics. A pair of scanning Langmuir probes measure edge n_e , T_e , and p_e in ohmic discharges. For an ohmically driven plasma with $I_p = 125$ kA, $B_T = 0.15$ T, time-average profiles indicate $n_e = 9$ eV, $T_e = 7 \times 10^{18} \text{ m}^{-3}$ at the radial location of the plasma limiter. A new 3-axis magnetic probe array is under consideration to measure j_{\parallel}/B in the edge of ohmic and helicity-driven discharges. This $j_{\parallel}(R, t)$ is of special interest for quantifying helicity-driven Taylor relaxation states.

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- Prefer Oral Session
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