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**Plasma Properties in the Pegasus Edge Region**[1] 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 $j_\parallel \big/ B$; 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, $T_e = 7\text{x}10^{18}$ m$^{-3}$ at the radial location of the plasma limiter. A new 3-axis magnetic probe array is under consideration to measure $j_\parallel \big/ B$ 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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Michael Bongard
University of Wisconsin-Madison

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