Improved Inferences of Electron Temperature and Plasma Potential Fluctuations in Large-Amplitude Edge Turbulence

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Prototype plugged Langmuir probes [1-4] have been developed and installed on the Texas Helimak for which the probe characteristic shows both electron and ion saturation regions with magnitudes not grossly different and floating potentials several $T_e$ above the usual $V_{\text{float}}$. The probe characteristics are studied in both argon and helium. Fluctuation spectra, especially floating potential, are compared with conventional Langmuir probes to separate the contributions of electron temperature and plasma potential variations. Transport fluxes using electric fields from the baffled probes will also be compared with the conventional inferences.