

Abstract Submitted
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Particle Probe Investigations on the Helicon Plasma Experiment (HPX)¹ JUSTIN SHERMAN, R.W. JAMES, M. LOPEZ, S. NOLAN, E.L. PAGE, C. SCHLANK, B.S. STUTZMAN, J. ZUNIGA, US Coast Guard Academy — A small Helicon Plasma Experiment (HPX) has been constructed at the Coast Guard Academy Plasma Lab (CGAPL) to utilize the reputed high densities at low pressure (.01 T) [1], in high temperature and density diagnostic development for future laboratory investigations. With the initial construction phase complete, HPX has produced its first plasmas. Efforts to develop and enhance the high temperature and density (10^{13} cm^{-3} and higher) helicon plasmas at low pressures (.01 T) reported by Toki, Shinohara, et. al. continue. Currently, particle probes to measure plasmas' temperatures and densities, necessary to discern the plasma mode transitions, are in development. Construction of independent mach and triple probes for single point surface investigations are underway and once installed, they will be followed by a triple probe array to produce a more comprehensive density and surface view. Progress on the construction and findings of these probes on HPX will be reported.

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