

Abstract Submitted
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Updates on Optical Emission Spectroscopy & Langmuir Probe Investigations on the Helicon Plasma Experiment (HPX)¹ JACKSON KARAMA, JOHN FRANK, PHILLIP AZZARI, JORDAN HOPSON, ROYCE JAMES, OMAR DUKE-TINSON, RICHARD PAOLINO, EVA SANDRI, JUSTIN SHERMAN, EVA WRIGHT, JEREMY TURK, U.S. Coast Guard Academy — HPX is developing a to shorter lifetime (20 - 30 ns) more reproducible plasma at the Coast Guard Academy Plasma Laboratory (CGAPL). Once achieved, spectral and particle probes will help to verify plasma mode transitions to the W-mode. These optical probes utilize movable filters, and ccd cameras to gather data at selected spectral frequency bands. Once corrections for the RF field are in place for the Langmuir probe, raw data will be collected and used to measure the plasma's density, temperature, and potentially the structure and behavior during experiments. Direct measurements of plasma properties can be determined with modeling and by comparison with the state transition tables, both using Optical Emission Spectroscopy (OES). The spectral will add to HPX's data collection capabilities and be used in conjunction with the particle probes, and Thomson Scattering device to create a robust picture of the internal and external plasma parameters on HPX. Progress on the implementation of the OES and Langmuir probes will be reported.

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