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## 1P65 - Development of a plasma source to accommodate an LIF dip measurement system

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Understanding air plasma chemistry requires accounting for the myriad of gas phase reactions initiated and mediated by electrons and excited species in the presence of an applied field. In the case of a time-varying electric field, this task of tracking reactions is even more complex. Models developed to track these physical processes require physics verification, model benchmarking and ultimately experimental validation. This effort aims to produce experimental measurements of the time-varying electric field associated with a pulsed air plasma. The effort is two-pronged, including diagnostic development and a plasma source to validate the diagnostic with a controlled and well-defined electric field. Here we describe a glow discharge hollow cathode source that provides a source of excited species which flow into a well-controlled, plasma-free electric field. These species will be probed by an LIF dip diagnostic for calibration and validation. Preliminary optical emission spectra of the source plasma as a function of pressure and power with argon and air as well as absorption spectroscopy of argon excited species using a white light source are presented along with specific features of the plasma source. Argon metastable density as a function of discharge power and pressure is also presented.

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