

Abstract Submitted  
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**Dual-Wavelength Interferometry and Light Emission Study for Experimental Support of Dual-Wire Ablation Experiments**<sup>1</sup> ANDREW HAMILTON, JAMES CAPLINGER, VLADIMIR SOTNIKOV, Air Force Research Laboratory, GENNADY SARKISOV, Raytheon, JOHN LELAND, USRA — In the Plasma Physics and Sensors Laboratory, located at Wright Patterson Air Force Base, we utilize a pulsed power source to create plasma through a wire ablation process of metallic wires. With a parallel arrangement of wires the azimuthal magnetic fields generated around each wire, along with the Ohmic current dissipation and heating occurring upon wire evaporation, launch strong radial outflows of magnetized plasmas towards the centralized stagnation region. It is in this region that we investigate two phases of the wire ablation process. Observations in the first phase are collisionless and mostly comprised of light ions ejected from the initial corona. The second phase is observed when the wire core is ablated and heavy ions dominate collisions in the stagnation region. In this presentation we will show how dual-wavelength interferometric techniques can provide information about electron and atomic densities from experiments. Additionally, we expect white-light emission to provide a qualitative confirmation of the instabilities observed from our experiments.

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