

Abstract Submitted  
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**Initial Results of Time-Resolved VUV Spectroscopy of Pulsed Dielectric Surface Flashover in Atmosphere**<sup>1</sup> GEORGE LAITY, KLAUS FRANK, GARRETT ROGERS, ANDREAS NEUBER, JAMES DICKENS, JAMES MOSS, TTU Center for Pulsed Power and Power Electronics — This paper describes some initial results from an experimental setup designed for studying the optical emission during pulsed surface flashover for the wavelength range from 115 nm to 180 nm at atmospheric pressures. A VM 505 from Acton Research Corporation was used as the spectrograph, with an Andor DH740 series ICCD camera mounted at the exit flange. Spectra were measured in nitrogen and air at atmospheric pressure with a flashover spark length of 8 mm under pulsed 35 kV excitation. Emission intensities were measured during gated 50 ns intervals, and it was concluded that most VUV emission occurs during the first stage of the flashover event. This is important because it is believed only radiation below 180 nm is energetic enough to cause photoionization leading to streamer discharge, and very little is known about VUV emission during this initial stage. Utilizing the NIST Atomic Spectra Database, a library of temperature dependent emission spectra was generated with SpectraPlot, a spectral software suite developed at TTU. The measured spectra will be discussed in relation to the physics of surface flashover at atmospheric pressure.

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