

Abstract Submitted
for the GEC05 Meeting of
The American Physical Society

Air-Plasma Test Cell, Electron-Beam Source, and Measurements of Electron Density and Ozone Concentration ROBERT VIDMAR, University of Nevada, Reno, KENNETH STALDER, Stalder Technologies and Research, MEGAN SEELEY, University of Nevada, Reno — An experimental facility at the University of Nevada, Reno, has recently been completed and initial testing is underway. A description of the facility for generation of air plasma from sea level to 300,000 ft, the electron-gun source, and two diagnostics will be discussed. The test cell has a volume of 400 liter, provisioning for electrodes to provide a sustaining electric field, and additional ports for future diagnostics. The ionization source consists of a pulsed 100 kV 10-20 mA electron beam and a thin-foil transmission window. The source provides plasma generation for approximately 1 ms and the diagnostics have sufficient bandwidth to resolve microsecond time dependencies. Electron concentration is measured using RF absorption and phase shift at X-band. Ozone concentration is measured by means of absorption at 254 nm in a White's cell. Results on initial measurements and plans for additional diagnostics to quantify other species will be discussed. This material is based on research sponsored by the Air Force Research Laboratory, under agreement numbers FA9550-041-1-0015 and FA9550-04-1-0444.

Robert Vidmar
University of Nevada, Reno

Date submitted: 10 Jun 2005

Electronic form version 1.4