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Experimental Details on Air-Plasma 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 — Details on the measurement of electron density and ozone concentration in air plasma are presented. Air plasma is generated by a 100-kV10- 20 mA electron beam for approximately 1 ms in a 400-liter test cell filled with air under atmospheric conditions from sea level to 300,000 ft. An electron-density measurement technique based on RF absorption and phase shift at X-band using a null-based differential measurement system is used. A White's cell topology is used to measured ozone concentration using absorption at 254 nm. System sensitivity, time response, engineering details, and representative data for both systems are quantified. 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.

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