

Abstract Submitted  
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**Plasma Electron Depletion via Cathode Spot Injection of Dielectric Particles**<sup>1</sup> ERIC GILLMAN, Naval Research Laboratory, JOHN FOSTER, University of Michigan — A method for addressing communication blackout associated with the formation of a dense plasma around reentry vehicles is reported upon. Quenchant particles launched into a background plasma via cathode spots is investigated as a means for free electron depletion. Time resolved measurement of electron density evolution during cathode spot “on times” is inferred by monitoring variations in the electron saturation current. Corrections for magnetic effects are also taken into account in the interpretation of temporal variations in the electron saturation current. Measurements indicated depletion levels of over 95% for model plasmas investigated.

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