Abstract Submitted
for the GEC10 Meeting of
The American Physical Society

Tomographic Analysis of a Plasmoid in Supersonic MW Post-Discharge MILKA NIKOLIC, ANA SAMOLOV, SVETOZAR POPOVIC, ALEX GODUNOV, LEPOSAVA VUŠKOVIC, Old Dominion University — The tomographic analysis was used for reconstruction of local plasma parameters of a plasmoid in the post-discharge region of an Ar supersonic MW discharge. The supersonic flow was generated using a convergent-divergent nozzle upstream of the discharge region [1]. A cylindrical cavity was used to sustain a discharge in the pressure range of 100-600 Pa. Evidence of plasma rotation was observed. We defined the numerical method based on the inversion of the Abel integral equation for a cylindrical cavity. Optical emission spectroscopy measurements were taken under two mutually perpendicular directions for evaluation of the spatial distribution of the excited species in the plasmoid region.

[1] Drake, D. J., S. Popovic, and L. Vuškovic, J. Appl. Phys. **104**, 063305 (7pp) (2008).

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Date submitted: 14 Jun 2010 Electronic form version 1.4