

Abstract Submitted  
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**Standing Striations in Capacitively Coupled Argon Plasma<sup>1</sup>**

VLADIMIR KOLOBOV, CFD Research Corporation, VALERY GODYAK, University of Michigan — Plasma stratifications are common in atomic and molecular gases. Moving striations are usually observed in DC discharges of noble gases, whereas standing striations are typically observed in molecular gases in both DC and RF plasmas. The nature of moving striations (ionization waves) is relatively well understood for DC discharges in noble gases [1]. Stratification of plasma in molecular gases is poorly understood. Although standing striations have been observed in capacitively coupled Argon plasma [2], their nature remained unclear. In this presentation we will report experimental observations and computer simulations of standing striations in Argon CCP. Experiments confirmed that standing striations do exist in pure Argon CCP in a long Pyrex tube with internal radius of 1.1 cm, the inter-electrode distance of 30 cm, at frequencies 3.6, 8.4 and 19.0 MHz, in a pressure range between 0.05 and 10 Torr, for a certain range of discharge currents (plasma densities). Comparison of computer simulations with experimental observations helped clarify the nature of these striations. [1] V I Kolobov, Striations in rare gas plasmas, *J. Phys. D: Appl. Phys.* **39**, R487 (2006) [2] H C J Mulders, W J M Brok and W Stoffels, Striations in a Low-Pressure RF-Driven Argon Plasma, *IEEE Trans. Plasma Sci* **36** 1380 (2008)

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