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**Simulation of moving striations in rare gas plasmas** VLADIMIR KOLOBOV, ROBERT ARSLANBEKOV, CFD Research Corporation, Huntsville, AL, USA — Ionization waves (moving striations) have been observed in classical DC discharges of rare gases in a wide range of gas pressures and discharge currents. Recently, striations have been also observed in plasma display cells and other microdischarges. We have obtained moving striations in computer experiments using self-consistent discharge model. The model includes Boltzmann solver for electron kinetics, fluid model for ion transport, Poisson equation for the electric field and (optionally) an external circuit model. Simulations are performed from cathode to anode in 1d or 2d settings. Striations appear initially near the cathode and propagate towards the anode as observed in experiments. The model allows studies of nonlinear waves and effects of external circuit on the wave properties. We will discuss the mechanism of striations for different operating conditions and present results of simulations for a DC discharge in Argon gas for a typical pressure of 1 Torr, tube radius  $R=1$  cm, for different discharge currents. High sensitivity of striations to the state of electron gas and ionization kinetics makes them an ideal tool for testing discharge models and advanced plasma diagnostics.

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