

Abstract Submitted  
for the GEC20 Meeting of  
The American Physical Society

**An algebraic RF sheath model for a wide range of excitation waveforms and amplitudes, and levels of collisionality**<sup>1</sup> TAGRA SAMIR, SEBASTIAN WILCZEK, MAXIMILIAN KLICH, Ruhr University Bochum, THOMAS MUSSENBROCK, Brandenburg University of Technology, RALF PETER BRINKMANN, Ruhr University Bochum — The boundary sheath of a low temperature plasma comprises often only a fraction of its volume but is responsible for many aspects of the macroscopic behavior. Reliable models of the sheath are therefore of theoretical and practical interest. Particularly interesting are "algebraic" models which describe the particle densities and the electrical field of the sheath in closed analytical form. This contribution presents an algebraic model of the RF modulated boundary sheath which applies for a wide range of excitation waveforms and amplitudes, and levels of collisionality. A comparison with the results of a kinetic Particle-in-Cell/Monte Carlo Collisions simulation is conducted.

<sup>1</sup>Deutsche Forschungsgemeinschaft DFG via SFB 1316 and RUB Research School

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Date submitted: 16 Jun 2020

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