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Harmonics excitation in capacitive rf discharges: A spatially resolved nonlinear model¹ DENNIS ZIEGLER, MARTIN LAPKE, THOMAS MUSSENBROCK, RALF PETER BRINKMANN, Ruhr University Bochum — The excitation of harmonics in capacitively coupled plasmas is a phenomenon that arises from an interaction between the linear behavior of the plasma bulk and the nonlinear behavior of the plasma sheath. Recent research has investigated the phenomenon by studying models which couple either a global or a spatially resolved description of the bulk to sheath models where the charge-voltage relation V = V(Q) was approximated as a quadratic form with constant coefficients.^{2,3} In this contribution, we improve the model by replacing that quadratic form with a more realistic charge voltage relation that is calculated on the basis of a self-consistent sheath model.

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