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The rf breakdown voltage curves-similarity law¹ MARIJA SAVIC, MARIJA RADMILOVIC-RADJENOVIC, MILOVAN SUVAKOV, ZORAN LJ. PETROVIC, Institute of Physics, University of Belgrade, Pregrevica 118, 11080 Belgarde Serbia — Capacitively coupled radio frequency (rf) discharges are attracting an increased attention due to their wide applications in many technological processes such as plasma etching for semiconductor materials, thin film deposition and plasma cleaning. One of the crucial problem in optimizing plasma technological process is determination of the plasma operating conditions which can be obtained from the breakdown voltage. It was shown that the RF breakdown voltage curves obey similarity law: Vrf =f(pd,f·d=const), where p is the gas pressure, d is the interelectrode distance and f is t the operating frequency. We have performed calculations in argon by using Monte Carlo code considering only electrons motion. Simulation conditions were based on the experimental conditions. The obtain results confirm similarity law and satisfactorily agree with the available experimental data.

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