Abstract Submitted
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Ionization coefficient measurements in DC microplasmas[1] ILIJA STEFANOVIC, Experimental Phys. II, Ruhr Universitaet, Bochum, Germany, THOMAS KUSCHEL, JOERG WINTER, Experimental Phys. II, Ruhr Universitaet, DRAGANA MARIC, Institute of Physics, University of Belgrade, Serbia, ZORAN LJ. PETROVIC, Institute of Physics, University of Belgrade, EXP. PHYS. II BOCHUM TEAM, GASEOUS ELECT. BELGRADE TEAM — While steady state Townsend discharges may provide data for ionization coefficients those are often not as accurate as those produced in dedicated pulsed current growth experiments. In this paper we show that one may be able to measure ionization coefficients in DC microdischarges that are of excellent quality. Measurements were made for argon and argon/nitrogen mixtures with different gas flow rates. The technique based measuring the spatial profile of emission a Townsend discharge. In spite of having the drift length of only 1 mm, excellent agreement has been found between our new measurements and the data for low-pressure, larger dimension (2-4cm) discharges in argon (Jelenak *et al*) for the E/N in the range from 300 Td to 4000 Td, where E/N is normalized electrical field strength. Below 300 Td our measured values are larger then those by Jelenak *et al*. This discrepancy with previous measurements will be discussed. The influence of the gas flow-rate and nitrogen concentration on the radial discharge profile in the Townsend mode will also be presented and discussed. Jelenak *et al* 1993 *Phys. Rev.* E **47** 3566

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