INVESTIGATION OF DIFFUSION INFLUENCE ON PLASMA CHANNEL FORMATION WHEN TRANSPORTING A LOW-ENERGY HIGH INTENSITY ELECTRON BEAM IN THE LOW PRESSURE GAZ

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In this work we consider the beam current in the range of 100–400 A and the external magnetic field in the range of 100–300 G. It is shown that plasma channel expands under the influence of diffusion. The channel expansion is inversely proportional to external magnetic field magnitude. Dependences of virtual cathod formation from beam current, beam energy (10–30 keV) and gas pressure (~ 0.0005 Torr) are found.

Keywords: *electron beam, argon, virtual cathode.*