FOCUSING OF LARGE ENERGY ION BEAMS BY REMOVAL CURRENTS OF COAXIAL PLASMA SOURCE

V.Kiselev, A.Linnik, V.Maslov, I.Onishchenko
NSC Kharkov Institute of Physics & Technology

Focusing feasible of proton beam with an energy 5 MeV and current 20 mA by azimuthal magnetic field of removal currents of coaxial plasma source has been investigated experimentally. It is shown, that a focusing coefficient depends on voltage magnitude on plasma gun electrodes. Focusing coefficient \( K = d_1/d_2 \equiv 10 \), where \( d_1 \) and \( d_2 \) – protons beam diameters without plasma and past through plasma, accordingly has been obtained. The trajectories of focused protons, calculated on a computer, have shown, that the aberrations determined by a current density inhomogeneity are small.