

SIMULATION OF THE EXTRACTION
OF A STRONGLY FOCUSED ELECTRON
BEAM FROM A PLASMA ELECTRON GUN

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S u m m a r y

Numerical simulation of the extraction of a strongly focused electron beam from a plasma electron gun with hollow cathode is performed. For this purpose, the methods of finite-difference and integral equations are used together with the direct trajectory analysis. The influence of a configuration of the magnetic field on the beam characteristics is investigated. It is shown that an additional axial magnetic field applied in the accelerating gap allows one to increase the beam current. The optimal values of the focusing current allowing one to obtain a small-diameter beam are determined.