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SIMULATIVE AND EXPERIMENTAL STUDY OF PLASMA DISTRIBUTION OF ELECTRIC
PROPULSION THRUSTER**Abstract**

The increasing of satellite on orbit life makes the Electric Propulsion Thruster more and more attractively. Electric Propulsion Thruster emits a plasma plume with both fast beam ions and slow charge exchange particles, and the plasma impacts the charging environment and surface potential. In this paper, a PIC (particle-in-cell) model is applied to investigate the plasma distribution of Electric Propulsion Thruster, and a LP probe is used to measure the density and temperature of the electron in the plasma. The results indicate that the plasma density of Electric Propulsion Thruster is in the range of $1E8m^{-3}$ to $1E15m^{-3}$, and the simulative result agree with the experiment well.