

Simulation of a Hall Thruster with Particle-In-Cell code

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A two-dimensional Particle-In-Cell (PIC) simulation of a Hall thruster is presented. The thruster is being developed for orbit transfer and correction of a small satellite. Preliminary investigation of the simulation result finds well separated acceleration and ionization layers. The simulation further shows that collisional ionization of the xenon neutrals allows sufficient acceleration of the ionized plasmas that is adequate for the intended correction and transfer of small satellite orbits. Anticipated performance of the thruster based upon the present results will be calculated.