

SPACE PROPULSION SYMPOSIUM (C4)
Electric Propulsion (4)

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THE EFFECT OF DISCHARGE LOOP INDUCTANCE COMPENSATION ON HALL THRUSTER

Abstract

1-100KHz low frequency oscillation exists during the operation of Stationary Plasma Thruster(SPT),which will lead to adverse impact on the performance of SPT.In view of inductance power filter,according to experimental study,this paper concludes the rules that how inductance compensation influences the loop oscillation and studies relations among oscillation,phase difference and frequency.It also completes simulation experiment through semi-discrete one-dimensional fluid model,with a coincident result.The result shows that,with the increase of inductance,electric current oscillation and fall of frequency,the voltage oscillation,electric current and voltage phase difference increase.