MAGNETOPLASMADYNAMIC THRUSTER (MPDT) IN AEROSPACE INDUSTRY: SOME NEW RESULT

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The trend of using Magnetoplasmadynamic thrusters (MPDT) in aerospace industry and spacecraft missions is widely believed to be very important and useful for its great efficiency as an electromagnetic propulsion and hence addressed here. Methods, techniques and approaches used in the study of MPDT are various. They include but not restricted to theories, experiments, observations, different numerical simulation methods, approaches and algorithms. One of the most outstanding problems in the MPDT is the challenge in the difficulty of sustain their efficiency increment. That is, generally, due to sinks losses, i.e. internal mode losses, plasma thermal loses radiations, etc.

In this work, we show results from our study and investigation in which we use specific approaches and certain theories (variational asymptotic methods and spectral finite element methods). Our main target, so, is to improve our understanding of MPDT problems in particular in aerospace field by, for, example, elucidate newsolution technique that provide the most efficient issues. We note that they give raise the simulation techniques or approaches compare to the expensive or (sometimes) unavailable experimental parametric studies.