# Numerical simulation of plasma behavior under external electromagnetic field

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Electric propulsion systems can provide high specific thrust compared to chemical propulsion systems, and are suited to long duration missions such as planetary missions. On the other hand, in case of many of the conventional electric propulsion systems, the performance is limited by electrode wastage. In order to overcome this difficulty, several novel ways to drive plasma via external electromagnetic field

have been proposed, but not much has been known regarding the plasma behavior when it is exposed to time-varying external field. In this presentation, we show our recent results on the plasma response to the external electromagnetic field using simulation. Implications of the results to the next generation electric propulsion systems will be discussed.