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Convex optimation of a pulsed inductive plasma thruster model
SAM ADHIKARI, Sysoft, R&D Division of Integratise Inc. — Exhaust velocity and efficiency are represented as a function of nondimensionalized set of coupled circuit equations and a momentum equation in a pulsed inductive plasma thruster model. Convex optimization techniques are used to maximize efficiency and to determine the optimal criteria. Statistical estimation techniques are used to optimally match the acceleration timescale to circuit's natural period. Vector optimization techniques allow the estimation of optimal fraction of the propellant loaded near the inductive acceleration coil to maximize performance.

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