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Micro-propulsion in space via dust - plasma thruster GARY ZANK, KHARE AVINASH, IGPP University of California Riverside — A new scheme of micro propulsion in space i.e. the dust – plasma thruster is proposed. The scheme uses plasma thermal energy to charge externally injected sub micron sized particles and simultaneously create electric fields in the plasma which accelerates them. Particles are subsequently charge stripped and exhausted to produce electrically neutral thrust obviating the need of a charge neutralizer. For reasonable plasma and particle parameters, thrust and specific impulse over a broad range may be produced. The dependence of thrust on particle size and other plasma parameters allows for a better thruster precision. The scheme is shown to have modest power requirements. It may be realized in a simple design where there are no high voltage grids or electrodes, charge neutralizer, valves, pressurized gases etc and can operate in space or vacuum. A layout for the possible configuration is described.

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