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SPACE PROPULSION SYMPOSIUM (C4)
Interactive Presentations (IP)

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SPACE GATES: REPURPOSING THE MINI-MAGNETOSPHEREIC PLASMA PROPULSION
SYSTEM AS A MASS DRIVER

Abstract

The Author will investigate the Mini-Magnetosphere Plasma Propulsion System, developed by Dr. Robert Winglee of the University of Washington and the National Aeronautics and Space Administration, to determine the possibility for use as a Space-age catapult. The intent is to show the feasibility of the M2P2 system as a Launch system by first discussing the current architecture and the possible configuration that could be used to support future missions. The M2P2 system creates a small magnetic field similar to Earth's magnetosphere to act as protect for the crew members against the harmful radiation in the space environment and will double as a magnetic solar sail for propulsion. This is accomplished by ejecting plasma around the spacecraft and creating a magnetic field that excites the plasma and increases it's effectiveness. By using the same technology on a stable orbital platform, a mass driver system can be created and used to propel the spacecraft much like a "rail-gun."