Abstract Submitted
for the DPP08 Meeting of
The American Physical Society

A Hall Thruster Design with Adjustable Acceleration Channel Depth and Azimuthally Uniform B-field DANIEL BARNAK, HANS PFISTER, Dickinson College — A Hall Thruster, also known as a Stationary Plasma Thruster (SPT) or a Closed Drift Thruster (CDT), is a gridless plasma propulsion device. In lieu of an accelerating grid a Hall Thruster uses the large potential drop near its exit plane to accelerate the propellant ions. The performance of such a thruster is critically dependent on the uniformity and shape of the thruster's predominantly radial magnetic field and the depth of the acceleration channel. We present here a new design, which features an azimuthally more uniform magnetic field and an adjustable anode location, allowing the investigator to vary the depth of the acceleration channel while the thruster is in operation.

Hans Pfister
Dickinson College

Date submitted: 15 Sep 2008 Electronic form version 1.4