

AGU Fall Meeting, December 13-17, 2010

Session SM05: Turbulent Magnetic Reconnection in Space, Laboratory and Astrophysical Systems

**The VASIMR® VF-200-1 ISS Experiment as a Laboratory for Astrophysics**

Tim W Glover, Jared P Squire, Benjamin Longmier, Leonard Cassady, Andrew Ilin, Mark Carter, Chris S Olsen, Greg McCaskill, Franklin Chang Díaz, Ad Astra Rocket Company

Edgar A Bering and David Garrison, University of Houston

Sharath Girimaji and Daniel Araya, Texas A&M

Lee Morin and John Shebalin, NASA JSC

The VASIMR® Flight Experiment (VF-200-1) will be tested in space aboard the International Space Station (ISS) in about four years. It will consist of two 100 kW parallel plasma engines with opposite magnetic dipoles, resulting in a near zero-torque magnetic system. Electrical energy will come from ISS at low power level, be stored in batteries and used to fire the engine at 200 kW. The VF-200-1 project will provide a unique opportunity on the ISS National Laboratory for astrophysicists and space physicists to study the dynamic evolution of an expanding and reconnecting plasma loop. Here, we review the status of the project and discuss our current plans for computational modeling and in situ observation of a dynamic plasma loop on an experimental platform in low-Earth orbit. The VF-200-1 project is still in the early stages of development and we welcome new collaborators.