

## **CRITICAL TEST OF THE DIRECTLY DRIVEN CURRENT SYSTEM CONCEPT**

J. W. Gjerloev (1), R. A. Hoffman (2), S. Ohtani (1)

(1) Johns Hopkins University, Applied Physics Laboratory, Laurel, MD 20723-6099, USA, [jesper.gjerloev@jhuapl.edu](mailto:jesper.gjerloev@jhuapl.edu), (+1) 240 228 5014.

(2) NASA-Goddard Space Flight Center, Laboratory for Extraterrestrial Physics, Greenbelt, MD 20771, USA.

We present results from a study of the response of the magnetosphere-ionosphere system to southward turnings of the Interplanetary Magnetic Field. This is the period during which the M-I system is preconditioned for a subsequent substorm expansion phase onset. The loading process is manifested in the ionospheric current system and we show extensive observations of challenging the “standard DP1-DP2 model”. We find significant differences in the response of the auroral electrojet system in the dark ionosphere vs. the sunlit ionosphere. This indicates a discontinuity located near or at the terminator.

Ionospheric current system, IMF, M-I coupling

J. W. Gjerloev, Johns Hopkins University, Applied Physics Laboratory, Laurel, MD 20723-6099, USA, [jesper.gjerloev@jhuapl.edu](mailto:jesper.gjerloev@jhuapl.edu), (+1) 240 228 5014.