

Comparing the ionospheric plasma drift obtained from the global MHD simulation and that measured by SuperDARN radars

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We present a parameter study of simulated processes of the magnetosphere-ionosphere (M-I) coupling using the global MHD simulation code developed by *Tanaka* (2010).

The boundary conditions for the M-I coupling include some scaling factors. These factors are adjustable and are determined through trial and error. The main goal of this study is optimization of these scaling factors in the boundary condition by use of a data assimilation technique.

In this paper, we combine the MHD simulation and solar wind parameters derived from the ACE satellite, and compare the ionospheric $E \times B$ plasma drift obtained from the global MHD simulation and that obtained from the SuperDARN HF Radar Network.

References:

Tanaka, T., A. Nakamizo, A. Yoshikawa, S. Fujita, H. Shinagawa, H. Shimazu, T. Kikuchi, and K. K. Hashimoto (2010), Sub-storm convection and current system deduced from the global simulation, *J. Geophys. Res.*, 115, A05220, doi:10.1029/2009JA014676.

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