

Recent progress on "Coupling by Dynamics" - ROSMIC/VarSITI

Erdal Yiğit (1), Takuji Nakamura (2), and Claudia Stolle (3)

(1) George Mason University, Department of Physics and Astronomy, Fairfax, United States (eyigit@gmu.edu), (2) National Institute of Polar Research, (3) Deutsches Geoforschungszentrum Potsdam

Earth's atmosphere is controlled by lower atmospheric (i.e. meteorological) processes from below and solar and geomagnetic processes (i.e. space weather) from above. Lower atmospheric gravity waves, tides, and planetary waves produce dynamical coupling between the lower and the upper atmosphere, transferring energy and momentum upward. There are also electrodynamical coupling processes taking place in the thermosphere-ionosphere, which can be modulated by lower atmospheric processes and can intensify during magnetically active periods and high solar activity. This talk will present some recent developments, current and upcoming international activities associated with VarSITI/ROSMIC's "Coupling by Dynamics" Working Group. Some research highlights will be presented. These topics overall highlight the necessity to study Earth's atmosphere as a unified system.