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Physical processes governing energy and momentum flows on multiple scales in near-Earth space using a first-principles based data assimilation system (DAS) for the global ionosphere-thermosphere electrodynamics

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Recommended Citation

Schunk, R. (2019). Physical processes governing energy and momentum flows on multiple scales in near-Earth space using a first-principles based data assimilation system (DAS) for the global ionosphere-thermosphere electrodynamics. Utah State University. <https://doi.org/10.26077/ZJ57-DJ25>

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NASA: 18-SMDSS18-0002; Physical Processes Governing Energy and Momentum Flows on Multiple Scales in Near-Earth Space using a first-principles based Data Assimilation System (DAS) for the Global Ionosphere-Thermosphere- Electrodynamics, 02/28/2019-02/27/2020, Funded \$233,955.00

NASA Contact: Dr. Jeff Morrill

Data Management Plan:

Our team has an excellent track record for delivering space weather models and products to government agencies and laboratories, including the Air Force Weather Agency (AFWA), Naval Research Laboratory (NRL), Air Force Research Laboratory (AFRL), and Community Coordinated Modeling Center (CCMC). The deliverables of the proposed project will consist of: (1) The MEPS Executive Master System, (2) Automatic validation tools for GAIM model output, (3) Ensemble averaging tools for multiple GAIM model runs, (4) The modified GAIM low- and mid-latitude data assimilation models that have an increase spatial resolution, (5) science results, (6) Processed simulation data for selected scenarios and (7) The corresponding raw simulation data.

In addition, USU has a computer storage system called Digital Commons, which can store publications, presentations, data, and model output. The simulations and publications that result from our research will be placed in Digital Commons. This will include the publications and all measurements and model output that are needed to reproduce the figures and tables in our publications. The data and simulation results will be in an easily readable format. The web address of our Digital Commons material will be listed on Government sites (NASA, NSF, etc.) so that our research results will be available to the public, industry, and scientific community.