Space Weather Forecasting at NOAA/SWPC with the Operational Geospace Mode

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The Geospace model was first transitioned into real-time operations at the NOAA Space Weather Prediction Center (SWPC) in October 2016 and has been upgraded once since going operational. The Geospace model is a part of the Space Weather Modeling Framework (SWMF) developed at the University of Michigan, and the model simulates the full time-dependent 3D Geospace environment (Earth’s magnetosphere, ring current and ionosphere) and predicts global space weather parameters such as induced magnetic perturbations in space and on Earth’s surface. The current version of the Geospace model uses three coupled components of SWMF: the BATS-R-US global magnetosphere model, the Rice Convection Model (RCM) of the inner magnetosphere, and the Ridley Ionosphere electrodynamics Model (RIM). In the operational mode, the Geospace model runs continually using real-time solar wind data from a satellite at L1, either DSCOVR or ACE. This presentation will describe the process of transitioning the Geospace model into real-time operations, including designing the real-time concept of operations (CONOPS) and transition challenges encountered along the way. We also present an analysis of the overall performance of the Geospace model during the first two years of real-time operations and discuss future plans for model upgrades and new regional Geospace products.

Refreshments will be served in the Physics lounge at 3:30