

# **Planetary WRF: A multiscale, planetary, atmospheric model**

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The NCAR terrestrial Weather Research and Forecast (WRF) atmospheric model has been converted into a global, planetary model. Planetary WRF is the first truly multi-scale numerical model having the ability to run on scales from meters to global, and with 2-way interactivity. The model is fully compressible, has 3D Coriolis and curvature treatment and has hydrostatic and non-hydrostatic options. The model has initially been converted for use on Mars and Titan with future applications to other planets planned. The dynamical core has been validated using the Held and Suarez (1994) generalized test, and comparison of 1D and 3D Martian versions with existing models. The conversion process and preliminary results at a variety of scales including validation will be presented.