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ATMO 558
Model Description

The Rapid Update Cycle (RUC) model is a high frequency (every hour) short-range numerical weather prediction model (out to 12 to 18 hours). The model uses a hybrid sigma and theta coordinate dynamical core discussed in Bleck and Benjamin (1983). The physics included within the parameterization scheme include: 1) explicit mixed phase cloud/moisture process, 2) convective parameterization, 3) land-surface physics, 4) MM5 radiation, 5)Burk-Thompson Boundary layer scheme. Recent upgrades (early 2008) have either included or modified the use of radar reflectivity, mesonet winds and TAMDAR aircraft observations as part of the data assimilation.

Due to the nature for which this model is used (i.e. aircraft and severe weather support), this model outputs high frequency (1 hour) and resolution (12 km gridspacing) data. The model outputs the usual suite of atmospheric variabiles (i.e. T, Td, RH, etc.) and convective tools (i.e. storm-relative helicity, simulated radar). The model is run every hour for specific regions (i.e. the southwest US). If a medium range forecast is desired, there is a developmental RUC (72 hours) that uses the same schemes as the operational RUC (12 hours).

Web link: http://ruc.noaa.gov/