

Dynamical Downscaling Global Climate Models' Seasonal Predictions Using Regional Atmospheric Modeling System (RAMS)

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ABSTRACT

The overall objective of this project is to use state-of-the-art Regional Atmospheric Modeling System (RAMS), dynamically and progressively downscaling from global Climate Forecast Systems (current and next versions of NCEP CFS, and NASA coupled model, at 100s-km grid increment) to a regional domain that covers the conterminous United States at 30-km grid increment. Our numerical experiment design will strictly follow the protocols defined in the white paper of CPPA FY2008 announcement (revised version). During the cold season, the precipitation is largely dependent on synoptic-scale mid-latitude storms and orographic dominant mesoscale processes. Driven by the same atmospheric and SST forcings, RAMS will be compared with other RCMs, and evaluated against observations and reanalysis (NARR) to see if the simulations capture the climatology and interannual variability of temperature and precipitation distributions. As a result, the overall strengths and weaknesses of the modeling systems will be identified, as well as the consistent model biases. In this poster, we will present our model and method, as well as the initial results from the first downscaling experiment with the operational NCEP global Climate Forecast System (CFS).