

9.7 Convective-scale experimental forecasts from the global variable-resolution Model for Prediction Across Scales (MPAS).

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Convection permitting NWP uses regional models and short forecasts periods because of computational constraints and the inherent limitations of downscaling global forecasts. Using global models that permit local refinement, existing computers are capable of producing CONUS-scale explicit convective forecasts over intermediate-range periods within operational time windows. The Model for Prediction Across Scales (MPAS) uses an unstructured spherical centroidal Voronoi mesh that allows for smooth cell-size variations between coarse and fine resolution regions on the mesh, and we been using it to produce experimental convective-scale global model forecasts. We will present MPAS forecast results from the May 2016 NOAA Hazardous Weather Testbed forecast experiment that demonstrate these MPAS capabilities. We will also outline future plans for MPAS development and applications.