

## **7.4 Testing of the multi-scale Kain-Fritsch scheme using regional and global models**

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The focus of our presentation is on the application of the Multi-Scale Kain-Fritsch (MSKF) convection parameterization scheme across a spectrum of spatial scales down to 1 km using the WRF, WRF-CMAQ, and MPAS models. Results obtained using the WRF model at 108, 36, 12, 4, and 1 km grid spacings with the MSKF scheme for regional weather and climate studies will be presented. In addition, results obtained using the coupled WRF-CMAQ model to study aerosol indirect effects on deep convective clouds, as represented by the MSKF scheme coupled with a double moment cloud microphysics scheme at hemispheric scales with 108 km grid spacing, will be presented. Finally, preliminary results obtained from the MPAS model with the MSKF scheme using a variable grid spacing (15-60 km) will also be presented.