

## **7.1 Improving simulated tropical storm landfall precipitation with a modified Kain-Fristch scheme**

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The US Environmental Protection Agency has been experimenting with various modifications to the Kain-Fritsch convective parameterization scheme to address a positive bias in precipitation from the WRF model in our applications using 12-km grid spacing. One such modification involves setting the convective adjustment time scale based on the dynamical considerations. Specifically, we set the convective time scale ( $\tau$ ) based on the strength of the convective updraft and the physical height of the convective cloud. In addition to reducing the positive precipitation bias, we found a significant improvement in the patterns of accumulated inland precipitation during landfall of various tropical storms. Our new formulation for the “Dynamic  $\tau$ ” will be described and results from our investigation of simulated tropical precipitation will be shown.