

Multi-scale Modeling of Land-Atmosphere Interactions in the North American Monsoon System

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A new effort has been initiated to utilize both the NMM and ARW versions of the WRF model to examine aspects of the North American monsoon system's interactions with the land surface and with surrounding air masses. Preliminary model results and strategies will be discussed. Broadly speaking, there are three major goals. First, we desire to couple WRF with a detailed process-oriented land surface scheme in order to describe vegetation interactions, in particular the effects of tropical deciduous vegetation phenology within the Sierra Madre Occidental. Secondly, nesting of the model will be used to consider the influence of urbanization of the "Valley of the Sun" on the monsoon in central Arizona. And finally, description of mesoscale processes along the eastern and western fringes of the monsoon system will be investigated.