



Examining the Effect of Moisture in the Atmosphere on idealized Flow past 2D Hills

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Systematic analyses using the Weather Research and Forecasting (WRF) model have been carried out to further a fundamental understanding of the effects of atmospheric moisture on idealized flow past two-dimensional (2D) hills. Results are discussed from extensive numerical experimentation that covers a wide range of mountain shapes and atmospheric upstream conditions (i.e., from approximately neutral to stable conditions). The presentation will highlight the great sensitivity of the terrain-triggered flow response and resulting spatial rainfall accumulation to the atmospheric stability and wind speed of the approaching airmass and to the terrain height and halfwidth. The moist simulation results are contrasted with results from corresponding dry simulations to visualize the observed dramatic differences.