RAL SEMINAR SERIES

Examining the Influence of Heterogeneous Forest Canopy on Shallow Convection at the Third ARM Mobile Site

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Heterogeneous land surfaces exert a strong influence on the exchange of energy and moisture with the atmosphere and can play a critical role in the initiation and organization of shallow convection. In the southeastern United States, locally driven shallow convection—often manifesting as fair-weather cumulus during spring and summer—is a prominent feature of the boundary layer. Yet the ways in which variations in forest canopy structure and associated fluxes shape these clouds remain poorly understood. As part of the project “Examining the Influence of Heterogeneous Forest Canopy on Shallow Convection at the Third ARM Mobile Site,” we are utilizing the extensive suite of measurements collected at the Bankhead National Forest ARM site, and have complemented them with newly installed multi-level eddy-covariance systems above and below the canopy. In parallel, mesoscale simulations are being developed to provide boundary conditions for forthcoming large-eddy simulations. Together, these efforts aim to advance understanding of canopy-driven variability in shallow convection.