

AMF3 BNF: Advancing a next-generation model-observing system testbed for integrative land-aerosol-cloud studies in the Southeast United States

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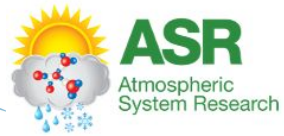
Looking west from a fire tower located at the USFS work center in Bankhead National



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Breakout Session Agenda

Introduction from the Site Science Team

2:00 - 2:05 Breakout Session Overview, *Chongai Kuang*

2:05 - 2:15 “Continuous Large Eddy Simulations of the onset of convection over BNF and SGP”, *Girish Nigamanth Raghunathan*

Model-Observation Integration: Approaches, Challenges, and Opportunities

2:15 - 2:25 “SOA formation due to multiphase chemistry over the SouthEast USA: Implications from integrated model-measurements studies including WRF-Chem over the Amazon”, *Manishkumar Shrivastava*

2:25 - 2:35 “Simulating isolated storms observed during TRACER using NU-WRF EPIC, a high-resolution weather model with polarimetric radar forward-simulation and prognostic electrification”, *Toshihisa Matsui & Marcus van Lier-Walqui*

Integrating Observations Across Scales: Approaches, Challenges, and Opportunities

2:35 - 2:45 “Quantifying structural uncertainty in the aerosol modeling hierarchy: particle-resolved modeling on LES scales”, *Matthew West*

2:45 - 2:55 “Regionally refined SCREAM for ARM sites”, *Hsi-Yen Ma*

Land-Atmosphere Interactions: Approaches, Challenges, and Opportunities

2:55 - 3:05 “A revised representation of atmospheric surface layer processes over perturbed surfaces and the need for the next generation of field experiments”, *Marc Calaf*

3:05 - 3:15 “Assessment of entrainment and advection in the diurnal cycle of the PBL over SGP and Bankhead National Forest”, *Thijs Heus*

3:15 - 4:00 Discussion

Discussion Questions

- What are the critical ARM observations, tools, and/or diagnostics that this group believes would support AMF3 modeling activities? Are there external datasets that ARM, the site science team, and other PIs should consider collecting throughout the deployment? What, if anything, does this group think is missing?
- Are there particular Southeast US “regimes of interest” that could be focal points for epochs, virtual IOPs, or other ways of organizing/making data more accessible? There will be an ARM field campaign dashboard during the deployment. Are there particular displays, ways of organizing observations that would help the community identify regimes, features of interest, select cases, and support data quality?
- Given the current scale/scope/spacing of the current AMF3 main and supplemental sites, are there particular observational scales (temporal, spatial), measurements (aerosol/trace gas, convective, land-atmosphere, radiation), and science questions that can be better targeted by IOPs?
- Are there under-utilized ARM observations/capabilities that this group thinks AMF3 BNF can better exploit? This may include particular instruments, retrievals, but also concepts like additional AMF3 BNF examples (e.g., codes, notebooks) on data workbench?
- If LASSO were to target AMF3 BNF in the future, what might that “look” like? Chemistry? Canopy? Aerosol? Land-surface heterogeneity? And, if so, how “early” can/should we start at BNF?

