SOUTHEASTERN UNITED STATES

The next deployment of the third ARM Mobile Facility will be in the Southeastern United States.

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SEUS Site Scientist Team – Presentation to the Warm BL Processes WG

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• First time ARM, ASR, and a Site Science Team (SST) are working together for an AMF deployment in this manner.

• There is no typical AMF3 deployment:
  • 5 year deployment.
  • SST are ambassadors, not gatekeepers.
  • Our SST proposal was funded, in part, because of Land-Atmosphere Interaction strengths (terrestrial focus).
  • Distributed Networks.
  • Emerging measurement opportunities?

• Siting and instrument prioritization of the AMF3 will be informed by community feedback.
Initial Team Activities & Needs: “Science Traceability Matrices”

- Science Driver ⇒ Prioritized Questions ⇒ Required Measurements
- Measurements ⇒ Instruments (prioritized) ⇒ Operational Requirements

SNL working on ArcGIS online viewer:

- Map layer generation (suggestions?)
- Example map layer: “surface-forced” shallow to deep convective locations within 100 km of a surveillance precipitation radar.
“What is the role of large-scale vs. mesoscale thermodynamic perturbations in the onset of shallow convection?”

• “Surface-driven” convective clouds – How does this inform SEUS siting (i.e., interior SEUS, flat terrain)?
• Distributed Networks: Supplemental sites – to what scales (T, moisture, ECOR, SFC albedo, ...)?
• Optimal cloud sampling capabilities? Multiple stereo cameras, cloud radar, Doppler lidar.
• Emerging technologies / IOPs?

Left: Multiple stereo cameras may improve 3D cloud sampling, mitigate issues with 2D/3D cloud radar observations such as sensitivity to shallow clouds and insect contamination.
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Slack channel

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