Focus Groups

A framework for integration of research activities
…and accelerated progress

ASR
Atmospheric System Research

Fall Meeting, 13 Sept 2011, Annapolis, MD

Objective of Focus Groups

To provide a framework for organizing, coordinating, and supporting scientific efforts that are of *strategic importance to ASR* yet are substantially larger than any individual PI effort. Typically these groups will focus on a specific *process that is not well understood and modeled*. The results, products, and output from these groups will comprise some of the important deliverables that help to define ASR and its progress.

http://asr.science.energy.gov/science/working-groups/focus-groups

SISC Feedback on Focus Groups

- Specific plans with tangible details and milestones
- Clear prioritization of activities
- Documented participation (who is participating and what will they be doing)
- Facilitate work that would not otherwise occur and that is larger than a specific PI effort.

SISC has conditionally accepted 3 FGs

1. New Particle Formation and Growth
2. Vertical Velocity (VV)
3. Quantification of Uncertainty in Cloud Retrievals (QUICR)

New Particle Formation and Growth

Objective: Use observations and laboratory experiments to develop models that accurately predict aeroso nucleation and growth rates and the composition of potential CCN, and to incorporate these into regional and global atmospheric models.

Deliverable: Empirical and first-principles models of nucleation and growth processes

Vertical Velocity

Mission: Use ARM measurements to improve understanding of the connection between cloud microphysics and cloud-scale dynamics, and provide observational targets (vertical velocity products) suitable to evaluate Large-eddy simulations, cloud-resolving models and aspects of large-scale model parameterizations.

Products: Integrated suite of VV algorithms and products at all sites and in all conditions

Quantification of Uncertainty in Cloud Retrievals (QUICR)

Mission: To develop a methodology for characterizing and quantifying uncertainties in current and future ARM cloud retrievals (VAPs and PI products), separately for different cloud regimes, in support of both retrieval algorithm improvements and cloud modeling studies.

Impact: Better quantification of uncertainties for important ASR cloud deliverables.

Many Interest Groups

- o Aerosol aging and mixing state
- o Anthropogenic/biogenic interactions in SOA formation
- o Aerosol optical properties
- o Thermodynamic/microphysical properties of mixed organic-inorganic aerosols
- o Radiative impact of aerosol-to-cumulus transitions
- ❖ Entrainment
- ❖ Madden Julian Oscillation (MJO)
- ❖ Convective-Stratiform-Anvil Transition (CStAT)
- ❖ Ice physical and radiative properties
- ➢ Aerosol effects on deep convection
- ➢ Arctic aerosol-cloud interactions
- ➢ Precipitation susceptibility
- ➢ Cloud effects on aerosols
- ➢ Cirrus and shallow cumuli in pristine environments
- ➢ Ice nucleation

Thanks for your participation!