

## 2006 Cloud Modeling Working Group Fall Meeting

### AGENDA

30-31 October 2006

Hilton Financial District, San Francisco, CA

#### Monday, 30 Oct. 2006

**8:00am** Morning refreshments

8:30am Meeting introduction / logistics / goal (Klein)

8:35am ARM status (Alapaty)

8:45am Plans for the 2<sup>nd</sup> AMF as a Marine Facility (Wiscombe)

#### **Tropical Convection**

9:00am Lagrangian diagnostics of tropical deep convection and its effect upon upper tropospheric humidity (Akos Horvath and Brian J. Soden)

9:20am The effect of microphysics on cumulus convective clouds dynamics: Large eddy simulations based on RICO data using bin microphysics model (Yefim Kogan and David Mechem)

9:40am Applying a shallow cumulus parameterization to deep cumulus convection - progress and potholes. (Chris Bretherton and Eeho Jung)

**10:00am - 10:30am Break**

#### **TWP-ICE**

10:30am TWP-ICE overview and initial results (J. Mather)

10:50am Satellite retrievals of cloud ice water for TWP-ICE (G. Liu)

11:05am Analysis of radar precipitation and surface turbulence fluxes for TWPICE (T. Hume)

11:15am Status of TWP-ICE forcing dataset (Xie)

#### **Tropical Convection Wrap-Up**

11:30am Discussion (led by Del Genio)

- *What is the analysis plan for TWP-ICE?*
- *What scientific problems can be addressed with TWP-ICE?*
- *How is ARM addressing the data needs for convection science?*
- *What scientific analyses are missing?*

**12:00pm – 1:30pm Lunch**

## **ARM Future Observing and Modeling Plans**

1:30pm Presentation and discussion of the AVA plan (Kollias ~30 minutes, Discussion ~20 minutes)

*Please read the AVA plan which is available on the WG webpage and come with questions and thoughts for the discussion.*

2:20pm 2009 Precipitation IOP Proposal (Kollias)

2:35pm Update on 2007 CLASIC IOP (Berg)

2:50pm ARM LES Testbed (ALT) plan (Albrecht)

**3:10pm – 3:30pm Break**

## **Potpourri**

3:30pm Microphysics of Autoconversion Parameterization (McGraw and Y. Liu)

3:50pm The use of a new ARSCL-based cloud type climatology to evaluate global model cloud fields (Tselioudis)

4:10pm Evaluation of SCM cloud simulations using ARM SGP observations (B. Xi)

4:30pm Further development of the constrained variational analysis method to incorporate data uncertainties (M. Zhang)

4:50pm Presentation and discussion of ARM SGP observational strategy: How many Extended Facilities are needed? (Xie)

**5:10pm Adjourn**

**6:30pm Group Dinner at Cathay House (\$35/person)**

## **Tuesday, 31 Oct. 2006**

**8:00am**      **Morning refreshments**

### **M-PACE Case Study**

8:30am      Overview of Case Study and First Results (Klein)

### **M-PACE Observations**

9:00am      Updates on Vertical Profiles of Microphysics from M-PACE (McFarquhar)

9:30am      Remote Sensing Data (*Clothiaux and Verlinde ~ 15 minutes; de Boer ~ 15 minutes*)

10:00am      NASA-Langley mixed-phase cloud products derived from MODIS data during M-PACE (Doug Spangenberg)

**10:15am – 10:45am Break**

### **M-PACE Model Results**

10:45am      Ice properties of boundary layer clouds during M-PACE: LES model results and implications (Fridlind)

11:05am      Heterogeneous freezing parameterizations in the ECHAM5-HAM global aerosol-climate-model: Application to M-PACE single column model studies (Hoose and Lohmann)

11:25am      Modeler Free-For-All

*Modelers are welcome to bring up to 2 ppt slides pointing out some key issues or points related to the intercomparison that they wish to bring to the attention of the group.*

**12:10pm – 1:30pm Lunch**

### **M-PACE Case Study (continued)**

1:30pm      Discussion (Fridlind & Klein)

- *Do we know how ice is nucleated/formed in the M-PACE cases? Are there multiple microphysical solutions that yield consistency with the observation?*
- *What are the science goals that are achievable with the intercomparison? What are the next steps for the intercomparison? Do we need greater consistency in the aerosol specifications (i.e. CCN activity, Ice nuclei)? Do we need offline microphysical intercomparisons? Or further synchronized sensitivity studies?*

- *What are the roles of other physical properties/parameterizations (turbulence/shallow convection)?*
- *If we think we understand the Arctic stratus at some point, does that understanding translate to wintertime freezing rain over the US, or midlatitude supercooled liquid altocumulus behind a cold front? Does that then suggest an SGP winter IOP?*

2:20pm ISDAC 2008: Overview and Discussion (Ghan)

- *What lessons were learned from M-PACE that help us with planning this experiment? What new (e.g. vertical velocity & water vapor) or better (aerosol & ice nuclei) measurements are needed? What science questions remain unanswered from M-PACE that can be addressed in ISDAC?*

**2:45pm – 3:15pm Break**

### **Other ARM Business**

3:15pm Presentation and discussion of the AAVP plan (McFarquhar)  
 3:35pm Overview and discussion of the ARM measurement status (Liljegren)  
 3:55pm Overview and discussion of the ARM VAP development (Turner)

- *Is the VAP process meeting the data needs for modelers?*

4:15pm Discussion of “Focus Groups” (Wiscombe)  
 4:35pm Meeting Wrap-up and Discussion of Action Items (Klein / Xie)

**5:00pm Adjourn**