

CESM Atmosphere & Whole Atmosphere & Chemistry-Climate WORKING GROUPS MEETING 08 - 12 FEBRUARY 2021

All talks are <12 minutes with 3 minutes for questions and transition

Monday, February 08

** All times are MST*

Overview and Vertical Resolution

Time	Title	Speaker
10:00	Welcome and logistics	
10:05	CAM overview	Julio Bacmeister, NCAR
10:25	WACCM overview	Nick Davis, NCAR/ACOM & Nick Pedatella, NCAR/HAO
10:45	CAM-chem & MUSICA overview	Louisa Emmons, NCAR
11:00	Future Infrastructure for CAM: The System for Integrated Modeling of the Atmosphere (SIMA)	Andrew Gettelman, NCAR
11:15	Toward the vertical resolution for the next generation of CESM	Isla Simpson, NCAR
11:30	DISCUSSION OF VERTICAL RESOLUTION and UNIFICATION (30-45 minutes)	

CLUBB and Clouds

Time	Topic	Speakers
1:00	EDMF CPT: Recent Developments	Joao Teixeira, NASA JPL
1:15	Implementing CLUBB+MF in CAM and Initial Results	Adam Herrington, NCAR
1:30	An Analysis of Momentum Nudging Tendencies Required to Keep CAM6 Close to ERA-I and MERRA2	Chris Kruse, NCAR
1:45	Connections between CLUBB's higher order moments and the surface	Meg Fowler, NCAR
2:00	An improvement to CLUBB's modeling of subcloud skewness	Benjamin Stephens, U. Wisconsin Milwaukee
2:15	Representation of Secondary Ice Production in CAM6 and Global Importance	Xi Zhao, Texas A&M
2:30	Convectively Coupled Waves Over South America in CESM	Richard Neale, NCAR
2:45	Seasonal Dependent Impact of Ice-Cloud Longwave Scattering on the Polar Climate	Xianglei Huang, U. Michigan
3:00	DISCUSSION OF PHYSICS (30-45 minutes)	

ACOM Seminar at 3:30: <https://www2.acom.ucar.edu/seminars>

Tuesday, February 09

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Computation/Numerics(?) and Dynamical Cores

Time	Title	Speaker
9:30	Results from idealized tests using different CAM dynamical cores (FV, FV3, SE, MPAS)	Peter Lauritzen, NCAR
9:45	Extending the Dynamical Core Test Case Hierarchy: Moist Baroclinic Waves with Topography	Christiane Jablonowski, U. Michigan
10:00	DISCUSSION ON DYCORE SELECTION (30-45 minutes)	

11:00 CGD SEMINAR: <https://www.cgd.ucar.edu/events/seminars>

CLUBB and Clouds (cont.)

Time	Title	Speaker
1:00	Reference Radiative Convective Equilibrium Climate in the Community Atmospheric Model	Levi Silvers, Stony Brook University
1:15	Quantifying the sensitivity of tropical cyclone structure to momentum flux in CAM6	Kyle Nardi, Penn State U.
1:30	Effects of Time Integration Error on the Water Cycle in EAMv1	Sean Santos, Columbia U.
1:45	Effects of organized mesoscale heating on the MJO and precipitation in CESM2	Jack Chen, NCAR

Aerosols and Climate Effects

Time	Title	Speaker
2:00	Evaluating the impact of the MAM5 on WACCM6 performance	Ziming Ke, Texas A&M
2:15	Biomass burning aerosols in the Community Atmosphere Model are too absorbing	Hunter Brown, Texas A&M
2:30	Exploring natural aerosol formation from DMS oxidation and implications for aerosol forcing	Ka Ming Fung, MIT
2:45	Changing PM2.5 and related meteorology over India from 1950-2014: A new perspective from a chemistry-climate model ensemble	Sarah Hancock, Columbia Univ.
3:00	DISCUSSION: CLOUDS, AEROSOLS	

Wednesday, February 10

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Middle Atmospheric Ozone and Dynamics

Time	Topic	Speakers
9:00	Updating SD-WACCM's deNOY Parameterization Improves Simulation of Arctic Ozone Loss in 2020	Catherine Wilka, MIT
9:15	Tropical Stratospheric Circulation and Ozone Coupled to Pacific Multi-Decadal Variability	Fernando Iglesias-Suarez, DLR
9:30	Evaluation of the CCMI-WMO REF-D1 WACCM6 Simulation	Doug Kinnison, NCAR
9:45	Tropical gravity wave observations and WACCM6 parameterized gravity waves from convection: Implications for simulation of the QBO	Joan Alexander, NWRA
10:00	Sensitivity of climate intervention stratospheric sulfur injections on stratospheric ozone	Simone Tilmes, NCAR
10:15	CESM2-WACCM6 S2S Simulations	Nick Pedatella, NCAR
10:30	DISCUSSION: MIDDLE ATMOSPHERE PROCESSES	

Social coffee break/lunch?

Climate Change

Time	Topic	Speakers
1:00	Assessment of equilibrium climate sensitivity of CESM2 through simulation of the Last Glacial Maximum (<i>invited</i>)	Jiang Zhu, NCAR
1:15	Refining Climate Change Event Attribution Capabilities in CAM	Kevin Reed, Stony Brook University
1:30	Exploring the Response of Tropical Cyclone Precipitation to Idealized Warming in CAM Aquaplanet Simulations	Alyssa Stansfield, Stony Brook University
1:45	DISCUSSION: CLIMATE PROJECTIONS/ECS	

Future Directions

Time	Topic	Speakers
2:15	Intro to the Simple Cloud-Resolving E3SM Atmosphere Model	Peter Caldwell, LLNL
2:30	Assessing Machine Learning Techniques as Emulators for Simple Physics in the Community Atmosphere Model	Garrett Limon, U. Michigan
2:45	A potential use for emerging multi-core architectures	Gunther Huebler, U. Wisconsin Milwaukee
3:00	Development of a Community CAM6 Perturbed Parameter Ensemble (PPE)	Trude Eidhammer, NCAR
3:15	NCAR Water System Research: South America	Roy Rasmussen, NCAR
3:30	DISCUSSION: FUTURE DIRECTIONS	

Thursday, February 11

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Tropospheric Chemistry and MUSICA

Time	Topic	Speakers
9:00	Chemistry Across Multiple Phases (CAMP): An integrated multi-phase chemistry model	Jorba Oriol, Barcelona
9:15	Development of the Harmonized Emissions Component (HEMCO) as an online emissions component for CAM-Chem and CESM-GC	Haipeng Lin, Harvard
9:30	Update on ozone tagging with TOAST and CAM-chem	Tim Butler, IASS-Potsdam
9:45	Current Status of VSL Halogen Chemistry in CESM 2.2: How Changes in Tropospheric SAD Fields Impact on Halogen Recycling and Washout	Rafael Fernandez, CONICET (Argentina)
10:00	Impact of COVID-19 lockdown on secondary pollutants across the world	Benjamin Gaubert, NCAR
10:15	Evaluation of CESM as a tool for health impact modeling of ambient air pollution	Forrest Lacey, NCAR
10:30	MUSICA simulations of fire impacts on air quality during the 2019 FIREX-AQ field campaign	Wenfu Tang, NCAR
10:45	Online Global-Regional air quality modeling using MUSICA - Case study of India	Behrooz Roozitalab, U. Iowa
11:00	Representing Asia Summer Monsoon using Regional Refinement with MUSICA	Jun Zhang, U. Illinois
11:15	Coupling the Mechanism of Intermediate complexity for Modelling Iron (MIMI v1.0) to CESM-CAM6: results of impacts of human activity on the iron cycle and marine biochemistry	Douglas Hamilton, Cornell
11:30	DISCUSSION MUSICA - Aerosols & Chemistry	

WRAP-UP DISCUSSION: FUTURE OF ATMOSPHERIC MODELING AT NCAR

Time	Topic	Format
1:00-2:00	Possible topics: <ul style="list-style-type: none">Expensive "cutting edge" models vs accessible models: Resolution -vertical and horizontal; Physics complexity and expenseAdditional topics that come up during the meeting	Breakouts followed by discussion

Friday February 12

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On-line Tutorial on Variable Resolution tools for CESM (Please indicate interest at <https://forms.gle/3EvGDZtSvtqpPHeR6>)

Time	Topic	Speaker
10:00-11:30	Variable Resolution tools for CESM	Patrick Callaghan