CESM Atmosphere / Whole Atmosphere / Chemistry-Climate WINTER WORKING GROUP MEETING

7-10 February 2022

Monday, February 7

** All times are MST; **Speakers**: please leave 5 min at the end of your slot for questions.*

Time	Topic	Speakers
Overview: CESM Atmosphere, Whole Atmosphere and Climate Chemistry		
9:00	**Welcome and logistics**	
9:05	AMWG Overview	Julio Bacmeister
9:25	Whole Atmosphere Overview	Nick Davis, Nick Pedatella
9:45	CCWG (& MUSICA) Overview	Louisa Emmons
10:05	***Additional discussion period for all overview talks***	
10:20	***Break***	
Physics Developments: Turbulence		
10:30	Current status of CAM/CLUBB+MF	Adam Herrington
10:45	Interpretable optimization of CLUBB to improve sea level pressure patterns in CAM6	
11:00	The sensitivity of global simulations to parameterized momentum flux in the Community Earth System Model	
11:15	A unified boundary layer and convection parameterization CPT project: Updates on recent developments	
11:30	***Discussion***	
11:45	***Break***	
Physics Developments: Other physics mechanisms		
12:45	Atmospheric responses to subgrid land surface heterogeneity	Meg Fowler
13:00	PUMAS: Evolving CESM microphysics for a multi-scale future	Andrew Gettelman
13:15	Important ice processes are missing by the climate model in Southern Ocean mixed-phase cloud: bridging from SOCRATES observation to model development	Xi Zhao
13:30	Secondary ice production in CESM2: Impacts on high latitude clouds, aerosol indirect forcing, and climate sensitivity	Xiaohong Liu
13:45	Effects of organized mesoscale convection on the tropical variabilities simulated by E3SMv1 and CESM2	Jack Chen

14:00	***Discussion***	
14:30	***ADJOURN***	

Tuesday, February 8

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Time	Topic	Speakers
9:00	Welcome and logistics	
Chemistry & Aerosols		
9:05	VSL Halogens in CESM: Coupling oceanic emissions, heterogeneous recycling and reactive transport to the stratosphere	Rafael Pedro Fernandez
9:20	The influence of iodine on the Antarctic stratospheric ozone hole	Carlos Alberto Cuevas
9:35	Upper stratospheric ClO and HOCl trends (2005-2020): Aura MLS and SD-WACCM6	Douglas Kinnison
9:50	Stratospheric chemistry impact of subgrid-scale gravity waves	MichaelWeimer
10:05	Seasonal, inter-annual and long-term trends variability of Carbon Monoxide	Ben Gaubert
10:20	A new scale-respecting parameterization of desert dust aerosol simulation for CESM2.1	Danny Leung
10:35	MUSICA-V0 simulation over Africa	Wenfu Tang
10:50	***Discussion***	
CGD Seminar and/or Break		
11:00	**CGD Seminar** - What should we expect for the future of North American hydroclimate? Youtube link: https://www.youtube.com/c/NCARCGD	Isla Simpson
Upper Atmosphere		
12:15	Planetary wave-driven model fidelity in the Arctic winter upper mesosphere during major and minor sudden stratospheric warmings	Lynn Harvey
12:30	GEOS Meteorology in the Whole Atmosphere Models	Valery Yudin
12:45	New methods for prescribing solar and geomagnetic forcing for CESM.	Daniel Marsh
13:00	***Discussion***	
13:15	***Break***	
CESM / CAM Physics Sensitivities		
13:30	Advances in CALIPSO (IIR) cirrus cloud retrievals and comparisons with WACCM6 predictions	David Mitchell
13:45	Understanding sensitivity of climate with a Perturbed Parameter Ensemble of the Community Earth System Model (CESM)	Trude Eidhammer

14:00	Examining the convergence of cloud radiative forcing for microphysical sub- stepping and alternative ice number limiter.	Øyvind Seland
14:15	Understanding and reducing erroneous(?) deep convection sensitivities in CAM	Richard Neale
14:30	Boundary layer turbulence over the Western North Atlantic Ocean from ACTIVATE: The impact of clouds and implications for model evaluation and development	Michael Brunke
14:45	***Discussion***	
15:00	***ADJOURN***	

Wednesday, February 9

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Time	Topic	Speakers
	Insights from Model Intercomparisons	
9:00	Welcome and logistics	
9:05	Wind-turning in the boundary layer in CMIP6 models	Joakim Pyykkö
9:20	The response of the large-scale tropical circulation to warming	Levi Silvers
9:35	Representation of extreme wind events in reanalysis and models	Michael Morris
9:50	***Discussion***	
	Dynamical Cores and Physics-Dynamics Coupling	
10:05	Current status of the CAM dynamical cores and vertical resolution	Peter Lauritzen
10:20	Numerical characteristics of CAM's FV3 dynamical core	Christiane Jablonowski
10:35	Numerical characteristics of CAM's SE dynamical core	Owen Hughes
10:50	Numerical coupling issues revealed by increased vertical resolution in the E3SM Atmosphere Model version 1 (EAMv1)	Hui Wan
11:05	***Discussion***	
11:20	***Break***	
	High-Resolution and Hierarchical Modeling	
12:20	System For Integrated Modeling of the Atmosphere (SIMA): Progress in next-generation community atmosphere modeling across Chemistry, Climate, Geospace and Weather	Andrew Gettelman
12:35	EarthWorks progress	David Randall
12:50	Projecting the response of tropical cyclone precipitation to climate change using a hierarchical CAM5 approach	Alyssa Stansfield
13:05	Comparison of CESM and WRF model simulations for South America	Patrick Callaghan
13:20	VR-CESM in high mountain Asia	Rene Wijngaard
13:35	Thermospheric and ionospheric effects by gravity waves from the lower atmosphere	Hanli Liu

13:50	***Discussion: High-Res and Hierarchies***	
14:05	***All-hands (all WGs) discussion: successes, gaps, and future needs***	
14:45	***ADJOURN (later if needed)***	

Thursday, February 10
On-line Tutorial on Variable Resolution tools for CESM

(Please indicate interest at https:// https://forms.gle/53zRudqnCr65gmSbA)

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Time	Topic	Speakers
10:00	Variable resolution tools for CESM	Patrick Callaghan
11:30	*ADJOURN*	

Thurs, February 25

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Time	Topic	Speakers
9:00	**Welcome and logistics**	
2:00	**Discussion**	
2:30	**Adjourn**	