

CESM Land and Biogeochemistry Working Group Meeting
3-5 March 2020
National Center for Atmospheric Research – Mesa Lab
Boulder, Colorado

Tuesday, March 3
Main Seminar Room

Join Remotely: <http://www.fin.ucar.edu/it/mms/v2/ml-msr-chat.html>

8:45	Coffee	
9:00	State of CLM and CESM	W. Wieder
9:30	The response of CLM1 GPP to climate drivers at interannual and intraseasonal Timescales [Remote]	G. Keppel-Aleks D. Lombardozzi
9:50	Terrestrial contributions to seasonal carbon drawdown	K. Lindsay
10:10	C cycle in CESM1 & CESM2	
10:30	Discussion	
10:40	<i>Break</i>	
11:10	Global FATES parameterization [Remote]	R. Fisher
11:30	LMWG Seminar: Have Land Surface Carbon Cycle Models Improved over Time?	F. Hoffman
12:10	<i>Lunch (on your own in ML Cafeteria)</i>	

Carbon cycle, plants & data assimilation

1:20	Addressing High Latitude Carbon Cycle Biases in CML5.0	L. Birch
1:40	Characterizing the influence of plant phenology shifts on land-atmosphere interactions using the Community Earth System Model	X. Li
2:00	Data assimilation of global leaf area index into the Community Land Model using DART	X. Huo
2:20	Carbon Monitoring System in Mountains – Development and Testing in the Western US with DART-CLM5	B. Raczka
2:40	Using least cost optimality theory to reliably simulate plant acclimation	N. Smith
3:00	Discussion	
3:10	<i>Break</i>	

Soils, nutrients & simple models

3:40	Optimizing data-driven representation of soil organic carbon in CLM5	Y. Luo
4:00	Modeling the role of soil moisture on organic matter decomposition	M. Pallandt
4:20	Quantifying Land-Use Impacts on SOC, Soil Texture, and Bulk Density and Simulating Human-Induced Soil Degradation	P. Wang
4:40	Adding different explicit spatial representations of plant symbiotic status in CLM5	R. Braghieri
5:00	Land surface properties change top of atmosphere energy fluxes through forcings and feedbacks	M. Lague
5:20	Discussion	

5:30-7:00 *Reception in Damon Room*

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Wednesday 4 March

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8:30 Coffee

Aerosols & more

8:40 Aerosol impacts on biogeochemical cycles: new insights for ocean and land systems N. Mahowald

9:00 Impacts of ammonia-aerosol-climate feedbacks on food security and air quality K. Fung

9:20 Increasing aerosol input to the Amazon caused by large-scale deforestation Y. Li

9:40 Investigating global fire behavior, variability, trends, and driving factors using an interactive fire module coupled with CESM2 W. Tang

10:00 How extreme events can catalyze long term paleoecological composition reorganization in a forest gap model A. Raiho

10:20 Discussion

10:30 *Break*

FATES

11:00 Forest responses to simulated elevated CO2 under alternate hypotheses of size- and Age-dependent mortality J. Needham

11:20 Exploring Coexistence within CLM-FATES in California P. Buotte

11:40 Plant hydraulic strategies in FATES-Hydro in California J. Ding

12:00 FATES-SPITFIRE: dynamic ecosystem assembly driven by fire and climate J. Shuman

12:20 *Lunch (On your own in the ML Cafeteria)*

1:30 Simulation of boreal treeline migration in a warming world A. Foster

1:50 Evaluating allometric and physiological parameters to improve aboveground biomass estimation of *Juniper occidentalis* at South Mountain, Idaho using the ED2 model K. Pandit

2:10 Lessons from the Field: How well can FATES simulate young forests? J. Rady

2:30 Integrating Forest Management Timing into the Selective Logging Module of CLM (FATES) K. Murenbeeld

2:50 A Model Foundation for Coupled Nutrient Cycling in FATES-ELM R. Knox

3:10 Discussion

3:20 *Break*

Water Cycle

3:50 Impacts of large-scale soil moisture anomalies on the regional hydroclimate of Southeastern South America C. Bieri

4:10 Representation of frost droughts in land surface models M. Lambert

4:30 Incorporating snow and ice algae into CLM M. Flanner

4:50 Exploring the uniqueness of the hydro-climatological cycle in Taiwan's montane cloud forests from observations and Community Land Model R. Gu

5:10 Hydrologic and Biogeochemistry Dynamics of a Semi-arid Watershed in the Pacific Northwest under a changing climate B. Zhu

5:30 *Adjourn, Dinner in Boulder*

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Thursday, 5 March
Main Seminar Room

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8:30	Coffee	
8:40	The effects of plant hydraulics on soil moisture memory and carbon cycle variability	D. Kennedy
9:00	Development of plant hydraulics in the Noah-MP land surface model	L. Lingcheng
9:20	Implications of future bioenergy crop expansion on water availability over the conterminous United States	Y. Cheng
9:40	Plant Growth Nullifies the Effect of Increased Water Use Efficiency on Streamflow Under Elevated CO ₂ in the Southeastern United States	A. Singh
10:00	Modeling ecosystem response to drought across timescales	L. Hawkins
10:20	Discussion	
10:30	<i>Break</i>	
11:00	Opportunities with the NASA GMAO & CLM [Remote]	R. Koster

Directions for CLM6 (part 1)

11:10	CTSM & CPTs	D. Lawrence
11:30	FATES	C. Koven
11:45	Hillslope Hydrology	S. Swenson
12:00	Multi layer canopy	G. Bonan
12:15	Crop Model	D. Lombardozzi
12:30	<i>Lunch (On your own in the ML Cafeteria)</i>	
1:45	<i>Discussions: Breakout groups to Damon and Chapman Rooms (TBD)</i>	

Damon Room:

Connect Remotely: Join Zoom Meeting <https://ncar-cgd.zoom.us/j/704008367> Meeting ID: 704 008 367

Chapman Room:

- Defining CLM6 for CESM3
 - Identifying high priority model developments & features
 - e.g. *Global FATES w/ LULCC*
- Community experiments with LMWG CSL allocation
- What have we learned from CMIP6?

4:00 *Debrief conversations*

4:30 *Adjourn*