

CESM Land Model and Biogeochemistry Working Group Meetings

29 February – 2 March 2012

National Center for Atmospheric Research – Boulder, Colorado

Mesa Lab – Main Seminar Room

WEDNESDAY, 29 February – Land Model Working Group Session

IAMs

- 8:30 [Dave Lawrence](#) – Welcome and Introduction
- 8:40 [Peter Thornton](#) – First results from coupled IAM-ESM (iESM): Influence of model coupling through land use and land cover change
- 8:55 [Andrew Jones](#) – Greenhouse gas policies influence climate via direct effects of land use change
- 9:10 [Adam Schlosser](#) – Assessing climate impacts of linked econometric-based land-use projections

Hydrology

- 9:30 [Hongyi Li](#) – A physically based runoff routing model for land surface and earth system models
- 9:45 [Maoyi Huang](#) – On the application of CLM-VIC at multiple scales
- 10:00 [Gautam Bisht](#) – A proposed model development strategy to incorporate 3-D subsurface hydrologic and thermal processes in CLM
- 11:00 [Zhenghui Xie](#) – A quasi three-dimensional variably saturated groundwater flow model for climate modeling

Land-atmosphere interactions

- 11:30 [Paul Shao](#) – CLM-related model evaluations and improvements at the University of Arizona
- 11:55 [Sanjiv Kumar](#) – Investigation of the effect of realistic land surface initialization on intra-seasonal to seasonal climate predictability in a changing climate
- 12:10 [Peter Lawrence](#) – Investigating the Biogeophysical impacts of land cover change in CLM4

Joint Land, Biogeochemistry, and Chemistry-Climate Working Group Session

- 1:30 [Dave Hart](#) – Yellowstone update
- 1:50 [Dave Lawrence](#) – LMWG update
- 2:20 [Jean-Francois Lamarque](#) – ChemClimWG update
- 3:30 [Danica Lombardozzi](#) – When physiological models fail: Fixing the ozone oxidation problem
- 3:45 [Adam Schlosser](#) – 21st century projections of CH₄ and N₂O soil-ecosystem emissions and climate-policy effects
- 4:00 [Bill Riley](#) – Progress on representing belowground N dynamics in CLM4
- 4:15 [Philip Cameron-Smith](#) – Update on plans for global CESM CH₄ simulations
- 4:30 [Mat Maltrud](#) – An Ocean Methane Cycle Model for use in CESM

THURSDAY, 1 March – Joint Land Model and Biogeochemistry Working Groups Sessions

Compare to observations and visualization

- 8:30 [Jim Randerson](#) – ILAMB
- 8:45 [Gretchen Keppel-Aleks](#) – Evolution of the three-dimensional structure of atmospheric carbon dioxide during the 21st century
- 9:00 [Chad Steed](#) – Visual analytics tools for CLM

Data Assimilation / Param Uncertainty

- 9:15 [Andrew Fox](#) – Ensemble-based Data Assimilation for the Community Land Model
- 9:30 [Dan Ricciuto](#) – Uncertainty quantification in CLM: Comprehensive parameter sensitivity analysis for single point and global simulations
- 9:45 [Beth Drewniak](#) – Crop Parameter Evaluation in CLM-Crop

High Latitude

- 10:45 [Andrew Slater](#) – Present-day and projected permafrost in the CMIP5 models
11:00 [Dave Lawrence](#) – Does increasing Arctic shrub abundance increase or decrease permafrost vulnerability?
11:15 [Zack Subin](#) – Permafrost Soil Warming Induced by CO₂-Physiological Forcing and Increased Rainfall
11:30 [Brendan Rogers](#) – Impacts of changing boreal forest fire regimes on landscape composition and regional climate
11:45 [Peter Thornton](#) – Multi-scale modeling approach to improve Arctic tundra ecosystem and climate system prediction – Ngee
12:00 Cathy Wilson – Parameterizing fine scale hydrology in the CLM_HRR model of the Mackenzie river basin

Nutrient cycles

- 1:30 [Xiaojuan Yang](#) – Introduction of phosphorus dynamics and global-scale supporting datasets for CLM
1:45 [Quinn Thomas](#) – Global patterns of nitrogen limitation: Confronting two global biogeochemical models with observations

Coupled BGC

- 2:15 [Keith Lindsay](#) – BGC in CMIP5 simulations

Ocean BGC

- 3:15 [Nicole Lovenduski](#) – Southern Ocean meridional overturning and air-sea CO₂ flux variability in the CESM
3:30 [Kazuhiro Misumi](#) – Oceanic iron cycle change and its impact on marine productivity in the 21st Century: a projection using CESM1
3:45 [Keith Moore](#) – Ocean Ecosystem Developments in CESM
4:00 [Jiaxu Zhang](#) – Water isotopes in the Ocean Component of CESM
4:15 [Scott Elliott](#) – Modeling Biogeochemistry within Sea Ice
4:30 [Shanlin Wang](#) – Impacts of Sea Ice on the Iron Cycle and Marine Ecosystems
4:45 [Gokhan Danabasoglu](#) – Ocean model developments relevant to BGC

Friday, 2 March – Joint Land Model and Biogeochemistry Working Groups Session

Soil and litter biogeochemistry

- 8:30 [Mingjie Shi](#) – Understanding and Modeling the Impacts of Soil Freeze/Thaw Processes on Water and Carbon Dynamics in High-latitude Regions
8:45 [Jiafu Mao](#) – Two-layer treatment of litter and soil organic matter pools and fluxes for CLM
9:00 [Gordon Bonan](#) – Use of the LIDET litter decomposition study to test soil carbon and nitrogen biogeochemistry in CLM
9:15 [Charlie Koven](#) – Soil BGC in CLM
9:30 [Jinyun Tang](#) – Progress in developing CLM4-BeTR: a tool for incorporating and evaluating different formulations of below ground biogeochemistry

Vegetation dynamics

- 10:30 [Abby Swann](#) – The merits and challenges of the ED-based approach to vegetation modeling
10:45 [Rosie Fisher](#) – Carbon allocation strategies, community dynamics and death CLM(ED)
11:00 [Chonggang Xu](#) – Toward a mechanistic nitrogen limitation for the Ecosystem Demography model
11:15 [Eunjee Lee](#) – Effects of inclusion of wind-driven seed dispersal in modeling the plant migration and estimating future terrestrial surface albedo from polar vegetation