

# CESM Land Model Working Group Meeting

Tuesday, 15 March 2011

Main Seminar Room, NCAR – Boulder, Colorado

08:00 *Coffee*

08:30 Bill Large (NCAR) – Welcome

08:35 [Dave Lawrence](#) (NCAR) – Introduction and State of CLM Project

09:00 [Bob Dickinson](#) (U. Texas at Austin) – Progress Installing 3D Canopy Radiation in CESM/CLM4

## **Hydrology**

09:15 Sean Swenson (NCAR) – Improved Cold Region Hydrological Processes for CLM

09:35 [Maoyi Huang](#) (PNL) – Evaluating and Improving CLM Hydrologic Processes for Integrated Earth System Modeling at Regional Scales

09:55 [Liang Yang](#) (U. Texas at Austin) – Improvement of CLM4 Soil Hydrology by Introducing Micropores / Macropores to the Soil / Aquifer Coupling

10:15 [Sirein Awadalla](#) (MIT) – Interactive Wetlands/Lakes in CLM-RTM and Impact in Nile Region

10:30 *Break*

11:00 [Gautam Bisht](#) (ORNL) – Incorporating 3D Subsurface Hydrologic Processes: Coupling PFLOTTRAN and CLM

11:20 [Anna Harper](#) (CSU) – Can We Realistically Represent Tropical Drought Stress in Models?

11:35 [Gil Bohrer](#) (Ohio State) – Assessing the Effects of Hydrodynamic Stresses on Stomatal Conductance in Forest Patches with Trees of Different Structures, Sizes, and Species

11:50 [Bill Riley](#) (LBL) – Water Isotopes

12:05 [MinHui Lo](#) (UC-Irvine) – Representation of Anthropogenic Effects in CLM: Application of GRACE

12:20 Discussion

12:30 *Lunch*

13:30 [Zack Subin](#) (UC-Berkeley) – Update on a Revised Lake Model for CLM

13:50 [Koichi Sakaguchi](#) (U. Arizona) – Recent CLM-related Progress at University of Arizona

## **DGVM**

14:15 [Kendra Castillo](#) (Purdue) – Evaluation of the New CNDV Option of the CLM: Effects of Dynamic Vegetation and Interactive Nitrogen on CLM4 Means and Variability

14:30 [Eunjee Lee](#) (MIT) – Estimating Vegetation Distribution in the 21<sup>st</sup> Century: The Role of Meteorology in Plant Migration

14:45 [Xiaodong Zeng](#) (Chinese Academy of Sciences) – Model Development and Application using CLM-DGVM

15:00 [Sam Levis](#) (NCAR) – 21<sup>st</sup> Century North Africa as Simulated in the CCSM4/CESM1

15:15 *Break*

## **Applications**

15:45 [Abby Swann](#) (Harvard) – Mid-latitude Afforestation: Consequences for General Circulation and Tropical Precipitation

16:00 [Eungul Lee](#) (Lehigh) – Effects of N-limited Downregulated GPP on Stomatal Resistance in CLM-CN during the 21<sup>st</sup> Century (preliminary experiments)

16:15 [Erik Mason](#) (presented by *Ben Felzer* – Lehigh) A Comparison of Early Holocene Orbital Insolation and Present-day Greenhouse Gas Forcings and Their Influences on Alaskan Ecosystems using CESM

16:30 Jung-Eun Lee (JPL) – Toward the Attribution of Recent Decadal Precipitation Differences over Tropical South America

16:45 Discussion – CLM Development Plans

17:30 *Adjourn*

**CESM Joint Land Model and Biogeochemistry  
Working Group Meetings  
Wednesday, 16 March 2011  
Main Seminar Room, NCAR – Boulder, Colorado**

08:00 *Coffee*

08:30 [Synte Peacock](#) (NCAR) – North American Surface Climate Simulation in CCSM4 over 20<sup>th</sup> C and RCPs

08:45 [Forrest Hoffman](#) (ORNL) – The International Land Model Benchmarking Project

***IAMs / Land Cover-Land Use***

09:00 [Bill Collins](#) (LBL) – Adding Integrated Assessment to CESM: Progress and Prospects

09:20 [Jiafu Mao](#) (ORNL) – ORNL Progress in the Integrated Earth System Model (IESM) Project

09:35 [Adam Schlosser](#) (MIT) – Permafrost, Thermokarst Methane, Climate Policy, and Climate Feedbacks using the IGSM-CLM Framework / Climate-equilibrium Response of Land Use under Different Land-Use Policies

09:55 [Peter Lawrence](#) (NCAR) – Land Cover/Land Use Change Carbon Fluxes over 20<sup>th</sup> C and RCPs

10:15 [Xiaoying Shi](#) (*presented by Jiafu Mao* – ORNL) – The Impact of Climate, CO<sub>2</sub>, Nitrogen Deposition, and Land Use Change on Simulated Contemporary Global River Flow

10:30 *Break*

11:00 [Lisa Murphy](#) (LBL) – Expansion of Loblolly Pines for Bioenergy Feedstock in Southeastern US: Climate Model Insights

11:15 [Andy Jones](#) (LBL) – An Improved Parameterization of Biofuel Cultivation for the Community Land Model

11:30 [Steve Edburg](#) (U. Idaho) – The Impact of Bark Beetle Outbreaks on Carbon Cycling in the Western US

11:45 [Brendan Rogers](#) (UC – Irvine) – Consequences of Post-fire Succession for Carbon and Energy Fluxes in CLM

12:00 [Bob Dickinson](#) (U. Texas at Austin) – Issues Involving Leaf and Soil Carbon and Nitrogen Cycling in CLM4

12:15 [David Erickson](#) (ORNL) – Constraining Terrestrial Biosphere CO<sub>2</sub> Exchange via Anthropogenic CO<sub>2</sub> Emission Seasonality

12:30 *Lunch*

**CESM Joint Land Model, Biogeochemistry, and  
Chemistry-Climate Working Group Meetings**

***The Global Methane Cycle***

13:45 [Peter Hess](#) (Cornell) – Introduction to Biogeochemistry-Climate / Chemistry Joint Session

14:05 [Bill Riley](#) (LBL) – Modeling Wetland Methane Emissions

14:25 [Lei Meng](#) (*presented by Peter Hess* – Cornell) – Constrained Estimate of Methane Emissions

14:45 [Scott Elliott](#) (LANL) – Arctic Marine Clathrate Destabilization

15:05 [Philip Cameron-Smith](#) (LLNL) – Methane Chemistry Experiments in CESM

15:25 *Break*

16:00 [Jean-Francois Lamarque](#) (NCAR) – Methane Lifetime in CESM

16:20 Discussion: Future Collaboration, Methane ‘Flying leap,’ Nitrogen Cycle, Ozone

17:00 *Reception*

**CESM Chemistry Climate Working Group Meeting**  
**Wednesday, 16 March 2011**  
**National Center for Atmospheric Research – Boulder, Colorado**

08:30 *Coffee*

09:00 B. Large (NCAR) – Welcome

09:05 A. Fiore (NOAA), P. Hess (Cornell), J.-F. Lamarque (NCAR) – General Introduction

09:15 [R. Neale](#) (NCAR) – CAM5 and Low Resolution CAM

09:40 [J. Bacmeister](#) (NCAR) – Middle Atmosphere CAM

10:00 [J.-F. Lamarque](#) (NCAR) – Updates to CAM-chem

10:30 *Break (with LMWG, BGCWG)*

11:00 [S. Tilmes](#) (NCAR) – New Datasets: GEOS5 / MERRA / HIPPO / Ozone

11:30 S. Tilmes / F. Vitt (NCAR) – Running CAM-chem

12:00 Open Discussion on Model Development

12:45 *Lunch*

# CESM Chemistry Climate Working Group Meeting

Thursday, 17 March 2011

Chapman Room, NCAR – Boulder, Colorado

08:30 *Coffee*

09:00 [J.-F. Lamarque](#) (NCAR) – CSL Proposal

09:10 [S. Tilmes](#) (NCAR) – GeoMIP

09:30 [J. English](#) (CU) – Geoengineering with CARMA

09:50 [P. Young](#) (NOAA) – HNCO

10:10 *Break (with LMWG / BGCWG)*

10:40 [S. Elliott](#) (LANL) – Ice Algae Emissions

11:00 [A. Fiore](#) (NOAA) – Pollution Events

11:20 [L. Emmons](#) (NCAR) – POLMIP

11:35 [C. Heald](#) (CSU) – National Park Project

11:45 Discussion on Existing Projects / Computational Requests

12:30 *Lunch*

13:30 [A. Conley](#) (NCAR) – Radiative Forcings using PORT

14:10 J.-F. Lamarque (NCAR) – Model Release

14:30 [Doug Kinnison](#) (NCAR) – VSL Halogen Chemistry in CAM-CHEM

15:30 *Adjourn*

# CESM Biogeochemistry Working Group Meeting

Thursday, 17 March 2011

Main Seminar Room, NCAR – Boulder, Colorado

08:00 *Coffee*

## ***BGC Analysis and Development***

08:30 [Keith Lindsay](#) (NCAR) – Coupled Carbon Simulations

08:50 [Matt Long](#) (NCAR) – Ocean Carbon Sink Dynamics in CESM1

09:10 [Kazuhiro Misumi](#) (CRIEPI/NCAR) – Does Bio-Refractory Dissolved Organic Matter Control the Global Oceanic Dissolved Iron Distribution?

09:30 [Keith Moore](#) (UC-Irvine) – BGC in x3 Ocean Model

09:50 [Keith Lindsay](#) (NCAR) – Ocean Model BGC Ongoing Developments

10:10 *Break*

10:50 [Peter Thornton](#) (*presented by Gautam Bisht* – ORNL) – Evaluating Modeled Carbon State and Flux Variables against Multiple NACP Observational Datasets

11:05 [Rosie Fisher](#) (NCAR) – Optimization-based Approaches to Simulating Canopy Leaf Area Investigated using CLM-CN

11:25 [Charlie Koven](#) (LBL) – Addition of Long-lived Soil Carbon to CLMCN

11:45 Wrap-up BGC Discussion – CMIP5, Coordinated Land / BGC Development, Validation of Carbon Model

12:30 *Adjourn*