

## LAND-ATMOSPHERE INTERACTIONS EXHIBITED BY COUPLED CARBON-CYCLE CLIMATE MODELS

*Forrest Hoffman (1), Peter Thornton (2), Inez Fung (3), W. Mac Post (1)*

1) Oak Ridge National Laboratory, Oak Ridge, TN 37831-6016 USA

2) National Center for Atmospheric Research, Boulder, CO 80305 USA

3) University of California, Berkeley, Berkeley, CA 94720-4767 USA

[forrest@climate.ornl.gov](mailto:forrest@climate.ornl.gov)

Two terrestrial biogeochemistry modules—CN by Thornton and CASA' by Fung, et al.—have been coupled to the Community Land Model Version 3 (CLM3), the land component model contained in the Community Climate System Model Version 3 (CCSM3). A third terrestrial biogeochemistry module called IBIS (the Integrated Biosphere Simulator) by Foley, et al., is presently being coupled to CLM3 to further explore land-atmosphere interactions specific to the global carbon cycle within the CCSM framework. A detailed model intercomparison project has been undertaken by the CCSM Biogeochemistry Working Group to elucidate the differences among these biogeochemistry modules in an effort to understand the terrestrial processes important to modeling the carbon cycle in a fully coupled Earth system model. It is expected that this project will result in a terrestrial model for use in future IPCC simulations. Presented will be early results from offline and partially coupled simulations of these terrestrial biogeochemistry modules with and without land cover change, fossil fuel emissions, and ocean carbon flux forcings over the 19<sup>th</sup> and 20<sup>th</sup> centuries.

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