The Carbon-Land Model Intercomparison Project (C-LAMP)

Climate Change Science

Objective:

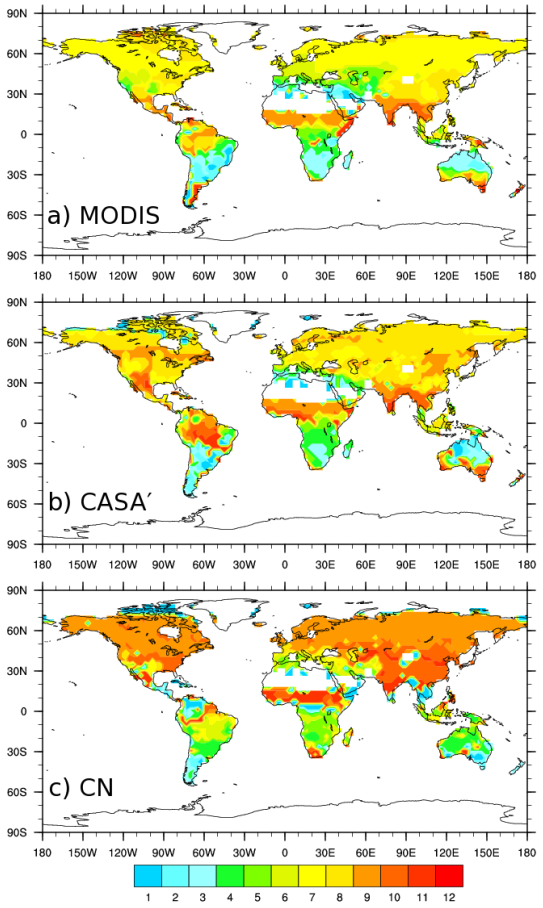
- Develop an experimental protocol, model evaluation metrics, a prototype diagnostics package, model output standards, and a database of simulation results to evaluate terrestrial biogeochemistry component of an Earth System Model.

New Science:

- The CCSM Biogeochemistry Working Group completed the study objectives, and published the results on the Earth System Grid.
- See http://www.climatemodeling.org/c-lamp.
- CASA' and CN biogeochemistry modules were run within the Community Land Model version 3.1 (CLM3.1), and model results were evaluated by comparison with satellite- and ground-based measurements

Significance:

- Significant improvements were made to the CN module as a result of this model evaluation, and CN was selected for inclusion in CLM4 for IPCC AR5/CMIP5 simulations C-LAMP will serve as a prototype for a new International Land Model Benchmarking (ILAMB) activity.



Month of maximum leaf area index

Comparison of remote sensing-based observation of month of maximum leaf area index with model predictions from the CASA' and CN version of CLM. This result led to an important improvement in the parameterization of the CN model phenology algorithm.

J.T. Randerson, F.M. Hoffman, P.E. Thornton, N.M. Mahowald, K. Lindsay, Y.-H. Lee, C.D. Nevison, S.C. Doney, G. Bonan, R. Stöckli, C. Covey, S.W. Running, I.Y. Fung, 2009. Systematic assessment of terrestrial biogeochemistry in coupled climate-carbon models. *Global Change Biol.*, 15(9):2462-2484. doi:10.1111/j.1365-2486.2009.01912.x.