

Jiafu Mao, Ph.D.

R&D Staff Scientist

Terrestrial Systems Modeling Group

[Climate Change Science Institute](#)

[Environmental Sciences Division](#)

[Oak Ridge National Laboratory](#)

Mailing address: P.O. Box 2008, MS 6301, Oak Ridge, Tennessee 37831-6201, USA

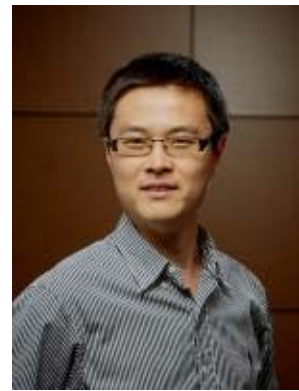
Phone: +1 (865) 576-7815 (work); +1(865) 804-5605 (cell phone)

Email: maoj@ornl.gov

<https://www.ornl.gov/staff-profile/jiafu-mao>

<https://climatechangescience.ornl.gov/content/jiafu-mao>

<http://ise.utk.edu/people/jiafu-mao/>



BIO

I study the response and feedback of land surface to climate change. My work primarily involves understanding hydrology, carbon cycling, and vegetation dynamics in the terrestrial ecosystems with field measurements, satellite data, process-oriented land surface and Earth system models; investigating the land surface response to multiple-factor global change and to attribute the variations of terrestrial ecosystem dynamics to natural and anthropogenic drivers; and global scale coupling research primarily concentrating on land-climate interactions with the integrated Earth system modeling framework. My research has been published in leading journals including Nature Climate Change, Nature Communications, Scientific Reports, Biogeosciences, Global Change Biology and Journal of Climate among others.

EDUCATION

- Combined MS-PhD, Atmospheric Sciences, 2007, Institute of Atmospheric Physics, Chinese Academy of Sciences, Beijing, China
- BS, Meteorology, 2001, Nanjing University of Information Science and Technology (Nanjing Institute of Meteorology), Nanjing, China

CURRENT RESEARCH AND OTHER PROJECTS AWARDED

- “Development of a Land Model Tested for rapid assessment and benchmarking of complex biogeochemical systems in land models”, 2017, ORNL LDRD fund, pending (Co-PI with Dr. Nathan Collier)
- “Remote sensing evaluation of urbanization impacts on terrestrial vegetation phenology simulated by ACME Land Model in the Continental United States”, 2017, seed funding of the ORNL Climate Change Science Institute, pending (PI)
- “Developing an integrated urban and Earth system modeling framework to disentangle natural and anthropogenic drivers of heat wave trends”, 2016, the DOE Early Career Research Program, pending (PI).
- “Integrated urban and Earth system modelling”, 2016, Early career funding of the ORNL Climate Change Science Institute (PI).
- “Terrestrial Ecosystem Science Scientific Focus Area”, 2016-2018, the Office of Biological & Environmental Research within the Department of Energy (DOE) Office of Science (Responsible for the development and application of the detection and attribution (D&A) methodology to disentangle natural and anthropogenic controls on terrestrial ecosystem dynamics).
- “The Next Generation Ecosystem Experiment-Tropics”, 2015-2017, the Office of Biological & Environmental Research within the DOE Office of Science (Responsible for better understanding the changes and drivers of tropical vegetation growth with multi-stream observations and model simulations under the RO1).
- “Evaluation of the Large-Scale and Regional Climatic Response Across North Africa to Natural Variability in Oceanic Modes and Terrestrial Vegetation Among the CMIP5 Models”, 2015-2017, the Office of Biological & Environmental Research within the DOE Office of Science (ORNL lead and Co-PI with Dr. Michael Notaro at the University of Wisconsin-Madison).
- “Quantifying Feedbacks and Uncertainties of Biogeochemical Processes in Earth System Models”, 2014–2017, the Office of Biological & Environmental Research within the DOE Office of Science (Responsible for the evaluation of earth system models and land surface models with remote sensing products, and the D&A study of the large-scale vegetation growth).
- “Stochastic parameterization of the influence of subgrid scale land heterogeneity on convective initiation”, 2012-2015, the Laboratory Directed Research and Development (LDRD) fund, ORNL (Co-PI with Dr. Daniel

S. McKenna, and responsible for the stochastic coupling of Community Land Model (CLM) to the atmosphere component of the Community Atmosphere Model (CAM), and the analysis of different results from the fully stochastic ensemble simulations).

- “The effects of land use/cover conversion assumptions on the global carbon cycle and climate in historical CESM simulations”, 2015-2016, NCAR SDWG computing resources for historical land conversion studies (Co-PI with Dr. Alan V. Di Vittorio, LBNL).
- “Terrestrial Ecosystem Science Scientific Focus Area”, 2011-2015, the Office of Biological & Environmental Research within the DOE Office of Science (Responsible for the simulation, evaluation and application of CLM at different spatial-temporal scales, the study of the carbon-climate feedbacks with the Community Earth System Model (CESM), and the calibration and improvement of the CLM based on the $^{13}\text{CO}_2$ and shading manipulations in a pine stand (Partitioning in Trees and Soil (PiTS))).
- “Climate Science for a Sustainable Energy Future”, 2011-2014, the Office of Biological & Environmental Research within the DOE Office of Science (Responsible for the development and evaluation of two-layer soil biogeochemical model in the CLM using the Enriched Background Isotope Study (EBIS) observations).
- “Integrated Earth System Model”, 2010-2014, the Office of Biological & Environmental Research within the DOE Office of Science (Responsible for the coupling of CESM/CLM, the Global Change Assessment Model (GCAM), and the Global Land-Use Model (GLM)).
- “Prognostic land use and land cover change for a coupled climate-biogeochemistry model”, 2008-2011, LDRD fund, ORNL (Responsible for the coupling of CESM/CLM with the Integrated Model to Assess the Global Environment (IMAGE)).
- “Improvement of the terrestrial ecosystem model in the earth system model”, 2007-2008, the China Meteorological Administration through Grant GYHY (QX) 2007-25 (Co-PI with Prof. Yongjiu Dai at the Beijing Normal University).

RESEARCH AND PROFESSIONAL EXPERIENCE

- 6/2016 – present an ORNL Joint Faculty Associate Professor in the Department of Industrial and Systems Engineering of University of Tennessee
- 7/2015 – 5/2016 an ORNL Joint Faculty Assistant Professor in the Department of Industrial and Systems Engineering of University of Tennessee
- 11/2011 – present Member of R&D Staff, ORNL
- 08/2009 – 11/2011 Postdoctoral Research Fellow, ORNL
- 01/2008 – 08/2009 Joint Postdoctoral Research Fellow, University of New South Wales and CSIRO, Sydney and Melbourne, Australia
- 10/2006 – 01/2008 Assistant Research Scientist, Institute of Atmospheric Physics, Chinese Academy of Sciences, Beijing, China

ACADEMIC AWARDS

- ORNL Supper Performance Award, November 2016, Oak Ridge National Laboratory
- Visiting scholar to National Center for Meteorological Research at Meteorology France, November 2016, Toulouse, France.
- Significant Event Award (SEA) in recognition of significant contribution to the Next Generation Ecosystem Experiment-Tropics, April 2015, Oak Ridge National Laboratory
- Significant Event Award (SEA) in recognition of significant contribution to the Intergovernmental Panel on Climate Change and National Climate Assessment Work, April 2014, Oak Ridge National Laboratory
- Visiting scholar fully funded by the Natural Environment Research Council (NERC) in UK, March 2007 to August 2007, Center for Terrestrial Carbon Dynamics (CTCD), The University of Sheffield, UK
- Visiting scholar fully funded by the Chinese Academy of Sciences, June 2005 to August 2005, CTCD, The University of Sheffield, UK
- Outstanding Graduate Student Leader Award, Chinese Academy of Sciences, 2006
- Outstanding Graduate Student Award, Chinese Academy of Sciences, 2006
- Outstanding Doctoral scholarship, Chinese Academy of Sciences, 2006
- Outstanding Doctoral scholarship, Chinese Academy of Sciences, 2005
- Outstanding Doctoral scholarship, Chinese Academy of Sciences, 2004
- Outstanding Doctoral scholarship, Chinese Academy of Sciences, 2003
- Outstanding Graduate, Nanjing Institute of Meteorology, 2001
- Scholarship for undergraduate, Nanjing Institute of Meteorology, 2000

- Scholarship for undergraduate, Nanjing Institute of Meteorology, 1999
- Scholarship for undergraduate, Nanjing Institute of Meteorology, 1998

PROFESSIONAL ACTIVITIES

- **Subject editor:** Ecosystem Health and Sustainability (launched in 2015 by the Ecological Society of America and the Ecological Society of China).
- **Membership:** American Geophysical Union, 2011-present; Ecological Society of America, 2015-present; European Geosciences Union, 2015-present; American Meteorological Society, 2016-present;
- **Co-convener:** “Tropical forests under a changing climate” for the 2017 AGU Fall Meeting, San Francisco, CA.
- **Theme Chair:** “LS3MIP in the CMIP6 Evaluation Priorities”, May 16-18, 2016, International workshop on “International Land Model Benchmarking (ILAMB)”, Washington, DC, USA.
- **Theme Chair:** “Observations: what trends have we identified in regional and global ET, GPP and GPP/ET?”, May 26, 2015, International workshop on “Quantifying uncertainties in land surface models”, Beijing Normal University, Beijing, China.
- **Co-convener:** “Vulnerability of Arctic and Boreal Ecosystem Under a Changing Climate” for the 2014 Annual Symposium of the US Regional Association of the International Association for Landscape Ecology (US-IALE), Anchorage, Alaska, USA.
- **Referee for:** Nature Geoscience, PNAS, Global Change Biology, Journal of Climate, Global Biogeochemical Cycles, the Journal of Geophysical Research-Atmosphere, the Journal of Geophysical Research-Biogeosciences, Geophysical Research Letters, Geoscientific Model Development, Remote Sensing, Remote Sensing of Environment, the International Journal of Climatology, PLOS ONE, Global and Planetary Change, Journal of Hydrometeorology, Atmosphere and Oceanic Science Letters, Journal of Cleaner Production, Journal of Scientific Research and Reports, Global Ecology and Biogeography, Climate Dynamics, Atmospheric Chemistry and Physics, Atmospheric Environment, Advances in Atmospheric Sciences, Scientific Reports, Ecological Modelling, International Journal of Remote Sensing, Journal of Advances in Modeling Earth Systems, Climatic Change, the ISPRS International Journal of Geo-Information, the chapter of a book entitled “Biophysical Applications of Satellite Remote Sensing”, and technical review of ORNL seed money and LDRD proposals.

QUOTES IN THE NEWS MEDIA

- Highlight in <https://climatechangescience.ornl.gov/content/getting-know-our-early> “Getting to know our early career scientists”.
- Selected highlights in <http://www.nature.com/nclimate/journal/vaop/ncurrent/nclimate3056/metrics> for the paper: “Human-induced greening of the northern high-latitude land surface”.
- Selected highlights in <http://sites.bu.edu/cliveg/highlights/articles-with-press-releases/greening-earth-zhu/> for the paper: “Greening of the Earth and its drivers”.
- Highlight in agrometeorology.org for global evapotranspiration study: “[Climate change is driving water cycle speed-up](#)”.
- Highlight in phys.org for the Partitioning in Trees and Soil (PiTS) project: “[Carbon tracking and climate models: Researchers study carbon cycling in deciduous trees](#)”.
- Highlight at ORNL for the Partitioning in Trees and Soil (PiTS) project: “[Refining climate models: Researchers study carbon cycling in deciduous trees](#)”.

PEER-REVIEWED PUBLICATIONS

First or corresponding author publications

1. Binyan Yan, **Jiafu Mao***, Xiaoying Shi, Robert E. Dickinson, Xiaoyang Zhang, Jin Wu and Daniel M. Ricciuto, 2017. Seasonally asymmetric responses of Amazon forests to El Niño. *Finished and to be submitted*.
2. Cheng-En Yang, **Jiafu Mao***, Forrest M. Hoffman, Daniel M. Ricciuto, and Joshua S. Fu, 2017. Uncertainty quantification of extratropical forest biomass in CMIP5 models over the Northern Hemisphere. *Finished and to be submitted*.
3. **Mao Jiafu**, Aurélien Ribes, Binyan Yan, Xiaoying Shi, Peter E. Thornton, Roland Séférian, Philippe Ciais, Ranga B. Myneni, Hervé Douville, Shilong Piao, Zaichun Zhu, Robert E. Dickinson, Yongjiu Dai, Daniel M. Ricciuto, Mingzhou Jin, Forrest M. Hoffman, Bin Wang, Mengtian Huang, and Xu Lian, 2016a. Human-induced greening of the northern high-latitude land surface. *Nature Climate Change*, 6, 959-963, doi:10.1038/nclimate3056.

4. **Mao Jiafu**, Daniel M. Ricciuto, Peter E. Thornton, Jeffrey M. Warren, Anthony W. King, Xiaoying Shi, Colleen M. Inversen and Richard J. Norby, 2016b. Evaluating the Community Land Model in a pine stand with ¹³CO₂ and shading manipulations. *Biogeosciences*, 13, 641-657, doi:10.5194/bg-13-641-2016.
5. **Mao Jiafu**, Wenting Fu, Xiaoying Shi, Daniel M Ricciuto, Joshua B Fisher, Robert E Dickinson, Yaxing Wei, Willis Shem, Shilong Piao, Kaicun Wang, Christopher R Schwalm, Hanqin Tian, Mingquan Mu, Altaf Arain, Philippe Ciais, Robert Cook, Yongjiu Dai, Daniel Hayes, Forrest M Hoffman, Maoyi Huang, Suo Huang, Deborah N Huntzinger, Akihiko Ito, Atul Jain, Anthony W King, Huimin Lei, Chaoqun Lu, Anna M Michalak, Nicholas Parazoo, Changhui Peng, Shushi Peng, Benjamin Poulter, Kevin Schaefer, Elchin Jafarov, Peter E Thornton, Weile Wang, Ning Zeng, Zhenzhong Zeng, Fang Zhao, Qiuhan Zhu, Zaichun Zhu., 2015. Disentangling climatic and anthropogenic controls on global terrestrial evapotranspiration trends. *Environmental Research Letters* 10, 094008.
6. Wang Kai, **Jiafu Mao***, Robert E. Dickinson, Xiaoying Shi, Wilfred M. Post, Zaichun Zhu and Ranga B. Myneni. 2013. Evaluation of CLM4 solar radiation partitioning scheme using remote sensing and site level FPAR datasets. *Remote Sensing*, 2013, 5(6), 2857-2882.
7. **Mao Jiafu**, Xiaoying Shi, Peter E. Thornton, Forrest M. Hoffman, Zaichun Zhu and Ranga B. Myneni. 2013. Global latitudinal-asymmetric vegetation growth trends and their driving mechanisms: 1982-2009. *Remote Sensing*, 2013, 5(3), 1484-1497.
8. **Mao Jiafu**, Peter E. Thornton, Xiaoying Shi, Maosheng Zhao and Wilfred M. Post, 2012. Remote sensing evaluation of CLM4 GPP for the period 2000 to 2009. *Journal of Climate*, 25, 5327-5342.
9. **Mao Jiafu**, Xiaoying Shi, Peter E. Thornton, Shilong Piao and Xuhui Wang, 2012. Causes of spring vegetation growth trends in the northern mid-high latitudes from 1982 to 2004, 2012. *Environmental Research Letters*, 7 014010 doi:10.1088/1748-9326/7/1/014010.
10. **Mao Jiafu**, Steven Phipps, Andrew J. Pitman, Yingping Wang and Bernard Pak, 2011. The CSIRO Mk3L climate system model v1.0 coupled to the CABLE land surface scheme v1.4b: evaluation of the control climatology, *Geoscientific Model Development* 4: 1115-1131.
11. **Mao Jiafu**, Andrew J. Pitman, Steven J. Phipps, Gab Abramowitz and Yingping Wang, 2010. Global and regional coupled climate sensitivity to the parameterization of rainfall interception. *Climate Dynamics* DOI: 10.1007/s00382-010-0862-7.
12. **Mao Jiafu**, Xiaoying Shi, Lijuan Ma, Dale P. Kaiser, Qingxiang Li and Peter E. Thornton, 2010. Assessment of re-analysis daily extreme temperatures with China's homogenized historical dataset during 1979 to 2001 using Probability Density Functions, *Journal of Climate* 23(24): 6605-6623.
13. **Mao Jiafu**, Li Dan, Bin Wang and Yongjiu Dai, 2010. Simulation and evaluation of terrestrial ecosystem NPP with M-SDGVM over continental China, *Advances in Atmospheric Sciences* 27(2): 427-442.
14. **Mao Jiafu**, Bin Wang and Yongjiu Dai, 2009. Sensitivity of the carbon storage of potential vegetation to historical climate variability and CO₂ in continental China, *Advances in Atmospheric Sciences* 26(1): 87-100.
15. **Mao Jiafu**, Bin Wang, Yongjiu Dai, and Morales Pablo, 2008. Simulations of carbon and water fluxes with the M-SDGVM in major European forest biomes, *Chinese Journal of Atmospheric Sciences* (in Chinese with English Abstract) 32(6): 1379-1391.
16. **Mao Jiafu**, Bin Wang, Yongjiu Dai, F. I. Woodward, P. J. Hanson and M. R. Lormas, 2007. Improvements of a dynamic global vegetation model and simulations of carbon and water at an upland-oak forest, *Advances in Atmospheric Sciences* 24 (2): 311-322.
17. **Mao Jiafu**, Bin Wang and Yongjiu Dai, 2006. Perspective on terrestrial ecosystem models and their coupling with climate system models, *Climatic and Environmental Research* (in Chinese with English Abstract) 11(6): 75-83.
18. **Mao Jiafu**, Bin Wang, Li Dan and Yinpeng Li, 2005. Coupling of an Atmosphere-Vegetation Interaction Model (AVIM) to a New Generation Grid Point Atmospheric General Circulation Model (GAMIL), *Chinese Journal of Atmospheric Sciences* (in Chinese with English Abstract) 29(6): 897-910.

Co-author publications

1. Zhou Sha, Bofu Yu, Philippe Ciais, Yao Zhang, Christopher R. Schwalm, Joshua B. Fisher, Anna M. Michalak, Weile Wang, Benjamin Poulter, Deborah N. Huntzinger, Shuli Niu, **Jiafu Mao**, Atul Jain, Akihiko Ito, Yaxing Wei, Yuefei Huang, Guangqian Wang, Xiaoying Shi, and Daniel M Ricciuto, 2017. Response of water use efficiency to global environmental change based on output from terrestrial biosphere models. *Finished and to be submitted.*
2. A. V. Di Vittorio, **J. Mao**, and X. Shi, 2017. The effects of land cover uncertainty on the global carbon cycle are comparable to those of CO₂ fertilization, climate change, and nitrogen deposition. *Finished and to be submitted.*

3. Ostro Stu, Jay Gullledge, Dale Kaiser, Whitney Forbes, Thomas Karnowski, Shih-Chieh Kao, **Jiafu Mao**, Xiaoying Shi Vincent Paquit, Tianyu Jiang, Joe Casola, Robert X. Black, Katherine J. Evans, Mingzhou Jin, Daniel Ricciuto, and Daniel Huber, 2017. Human-induced changes in mid-tropospheric geopotential heights and mid-latitude extreme ridging events in the northern hemisphere. *Finished and to be submitted.*
4. Yu, Y., M. Notaro, F. Wang, J. Mao, X. Shi, Y. Wei, 2017. Validation of a statistical methodology for extracting vegetation feedbacks: focus on North African ecosystems in the Community Earth System Model. *Finished and to be submitted.*
5. Wang, F., Y. Yu, M. Notaro, **J. Mao**, X. Shi, Y. Wei, 2017. Advancing a model-validated statistical method for decomposing the key oceanic drivers of regional climate: Focus on North African climate variability in the Community Earth System Model. *Submitted to Journal of Climate.*
6. Yu, Y., M. Notaro, F. Wang, J. Mao, X. Shi, Y. Wei, 2017. Observed vegetation-climate feedbacks in the Sahel: Is the classic albedo feedback mechanism truly dominant? *Submitted to Nature Communication.*
7. Jinglu Song, Mingzhou Jing, Zhenhong Lin, and **Jiafu Mao**, 2017. Electrical Vehicle Pricing and Market Adoption: a Study on the California Electric Vehicle Market. *Submitted to Energy Policy.*
8. Huntzinger, D.N., A. M. Michalak, C. Schwalm, P. Ciais, K. Schaefer, A.W. King, Y. Wei, R.B. Cook, J.B. Fisher, D. Hayes, M. Huang, A. Ito, A. K. Jain, H. Lei, C. Lu, F. Maignan, **J. Mao**, N. Parazoo, S. Peng, B. Poulter, D. Ricciuto, X. Shi, H. Tian, W. Wang, N. Zeng, F. Zhao, 2017. Multiple drivers important for controlling trends in net land sink since 1959. Accepted, *Scientific Reports.*
9. Yuanyuan Fang, Anna M. Michalak, Christopher Schwalm, Deborah Huntzinger, Joseph A. Berry, Phillippe Ciais, Shilong Piao, B. Poulter, J.B., Fisher, R.B. Cook, D. Hayes, M. Huang, A. Ito, H. Lei, **J. Mao**, N. Parazoo, X. Shi, Bo Tao, W. Wang, Yaxing Wei, and Jia Yang, 2017, Global land carbon sink response to temperature and precipitation varies with ENSO phase. Accepted, *Environmental Research Letters.*
10. Peter E. Thornton, Katherine Calvin, Andrew D. Jones, Alan V. Di Vittorio, Ben Bond-Lamberty, Louise Chini, Xiaoying Shi, **Jiafu Mao**, William D. Collins, Jae Edmonds, Allison Thomson, John Truesdale, Anthony Crais, Marcia L. Branstetter and George Hurtt, 2017. Biospheric feedback effects in a synchronously coupled model of Earth and human systems. Accepted, *Nature Climate Change.*
11. Zhenzhong Zeng, Laurent Zhaoxin Li, Liming Zhou, Philippe Ciais, Yue Li, Xu Lian, Pierre Friedlingstein, **Jiafu Mao**, Ranga Myneni, Shushi Peng, Xiaoying Shi, Sonia Seneviratne, Tao Wang and Yingping Wang, 2017a. Climate mitigation from vegetation biophysical feedbacks during the past three decades. Accepted, *Nature Climate Change.*
12. Shilong Piao, Zhuo Liu, Tao Wang, Sushi Peng, Philippe Ciais, Mengtian Huang, Ivan A Janssens, Su-Jong Jeong, Xin Lin, **Jiafu Mao**, John Miller, Anwar Mohammad, Ranga B Myneni, Josep Penuelas, Xiaoying Shi, Zhenzhong Zeng, and Pieter P Tans, 2017. Weakening temperature control on the variations of spring carbon uptake across northern lands. *Nature Climate Change*, 7, 359-363, doi:10.1038/nclimate3277.
13. Hoffman, F. M., C. D. Koven, G. Keppel-Aleks, D. M. Lawrence, W. J. Riley, J. T. Randerson, A. Ahlström, G. Abramowitz, D. D. Baldocchi, M. Best, B. Bond-Lamberty, M. De Kauwe, A. S. Denning, A. Desai, V. Eyring, R. Fisher, P. J. Gleckler, M. Huang, G. Hugelius, A. K. Jain, N. Y. Kiang, H. Kim, R. D. Koster, S. V. Kumar, H. Li, Y. Luo, **J. Mao**, N. G. McDowell, U. Mishra, P. Moorcroft, G. S. H. Pau, D. M. Ricciuto, K. Schaefer, C. R. Schwalm, S. Serbin, E. Shevliakova, A. G. Slater, J. Tang, M. Williams, J. Xia, C. Xu, R. Joseph, and D. Koch (2016), *International Land Model Benchmarking (ILAMB) 2016 Workshop Report*, DOE/SC-XXXX, U.S. Department of Energy, Office of Science, Germantown, Maryland, USA, XXX pp., doi:10.7249/XXXXXXXX, in press.
14. Xuecao Li, Yuyu Zhou, Ghassem R. Asrar, **Jiafu Mao**, Xiaoma Li, and Wenyu Li, 2016. Response of vegetation phenology to urbanization in the conterminous United States. *Global Change Biology*, doi:10.1111/gcb.13562.
15. Lianhong Gu, Stephen G. Pallardy, Bai Yang, Kevin P. Hosman, **Jiafu Mao**, Daniel Ricciuto, Xiaoying Shi, and Ying Sun, 2016. Testing a land model in ecosystem functional space via a comparison of observed and modeled ecosystem flux responses to precipitation regimes and associated stresses in a central USA forest. *Journal of Geophysical Research-Biogeosciences*, 121 (7), 1884-1902.
16. Zhenzhong Zeng, Laurent Zhaoxin Li, Philippe Ciais, Mengtian Huang, **Jiafu Mao**, Ranga Myneni, Xiaoying Shi, and Tao Wang, 2017b. Terrestrial water cycle intensified by recent Earth greening. *Submitted to Journal of Climate.*
17. Fisher, J.B., M. Sikka, D.N. Huntzinger, C.R. Schwalm, J. Liu., Y. Wei, R.B. Cook, A.M. Michalak, K. Schaefer, A.R. Jacobson, M.A. Arain, P. Ciais, D.J. Hayes, M. Huang, S. Huang, A. Ito, A.K. Jain, H. Lei, C. Lu, F. Maignan, **J. Mao**, N. Parazoo, C. Peng, S. Peng, B. Poulter, D.M. Ricciuto, H. Tian, Xiaoying Shi, W. Wang, N. Zeng, F. Zhao, and Q. Zhu 2016. CMS: Modeled Net Ecosystem Exchange at 3-hourly Time Steps, 2004-2010. ORNL DAAC, Oak Ridge, Tennessee, USA. <http://dx.doi.org/10.3334/ORNLDAAC/1315>.

18. B. Van den Hurk, H. Kim, G. Krinner, S. I. Seneviratne, C. Derksen, T. Oki, H. Douville, J. Colin, A. Ducharne, F. Cheruy, M. Puma, Y. Wada, W. Li, B. Jia, A. Alessandri, D. Lawrence, G. P. Weedon, R. Ellis, S. Hagemann, **J. Mao**, M. Flanner, M. Zampieri, and R. Law, 2016. The Land Surface, Snow and Soil moisture Model Intercomparison Program (LS3MIP): aims, set-up and expected outcome. *Geosci. Model Dev.*, 9, 2809-2832, doi:10.5194/gmd-9-2809-2016.
19. R. J. Haarsma, M. Roberts, P. L. Vidale, C. A. Senior, A. Bellucci, S. Corti, N. S. Fučkar, V. Guemas, J. von Hardenberg, W. Hazeleger, C. Kodama, T. Koenigk, L. R. Leung, J. Lu, J.-J. Luo, **J. Mao**, M. S. Mizieliński, R. Mizuta, P. Nobre, M. Satoh, E. Scoccimarro, T. Semmler, J. Small, J.-S. von Storch, 2016. High resolution model intercomparison project (HighResMIP). *Geosci. Model Dev.*, 9, 4185-4208, doi:10.5194/gmd-9-4185-2016.
20. Junjiong Shao, Xuhui Zhou*, Yiqi Luo, Guodong Zhang, Bo Li, Li Dan, Zhiqiang Gao, Yong He, Deborah Huntzinger, Atul Jain, **Jiafu Mao**, Jihua Meng, Anna Michalak, Changhui Peng, Benjamin Poulter, Christopher R. Schwalm, Xiaoying Shi, Rui Sun, Fulu Tao, Ning Zeng, Qian Zhu, and Wenquan Zhu, 2016. Uncertainty analysis of terrestrial net primary productivity and net biome productivity in China during 1901-2005. *Journal of Geophysical Research-Biogeosciences*, 121, doi:10.1002/2015JG003062.
21. Rebecca T. Thomas*, Iain Colin Prentice, Heather Graven, Philippe Ciais, Joshua B. Fisher, Maoyi Huang, Deborah N. Huntzinger, Akihiko Ito, Andy Jacobson, Atul Jain, **Jiafu Mao**, Anna Michalak, Shushi Peng, Benjamin Poulter, Daniel M Ricciuto, Xiaoying Shi, Christopher Schwalm, Hanqin Tian, and Ning Zeng, 2016. CO₂ and greening observations indicate increasing light-use efficiency in northern terrestrial ecosystems. *Geophysical Research Letters*, doi:10.1002/2016GL070710.
22. Metcalfe, D. B., Ricciuto, D., Palmroth, S., Campbell, C., Hurry, V., Mao, J., Keel, S. G., Linder, S., Shi, X., Näsholm, T., Ohlsson, K. E. A., Blackburn, M., Thornton, P. E. and Oren, R., 2016. Informing climate models with rapid chamber measurements of forest carbon uptake. *Global Change Biology*, doi: 10.1111/gcb.13451.
23. Ito, A., Inatomi, M., Huntzinger, D.N., Schwalm, C., Michalak, A.M., Cook, R., King, A.W., **Mao, J.**, Wei, Y., Post, W.M., Wang, W., Arain, M.A., Hayes, D.J., Ricciuto, D.M., Shi, X., Huang, M., Lei, H., Tian, H., Lu, C., Yang, J., Tao, B., Jain, A., Poulter, B., Peng, S., Ciais, P., Fisher, J.B., Parazoo, N., Schaefer, K., Peng, C., Zeng, N., Zhao, F., 2016. Decadal trends in the seasonal-cycle amplitude of terrestrial CO₂ exchange: an analysis of Multi-scale Terrestrial Model Intercomparison Project ensemble of terrestrial biosphere models. *Tellus B*, 68, 28968, <http://dx.doi.org/10.3402/tellusb.v68.28968>.
24. Zaichun Zhu, Shilong Piao, Ranga B. Myneni, Mengtian Huang, Zhenzhong Zeng, Josep G. Candell, Philippe Ciais, Stephen Sitch, Pierre Friedlingstein, Almut Arneth, Benjamin D. Stocker, Benjamin Poulter, Charles Koven, Chunxiang Cao, Etsushi Kato, Hui Yang, **Jiafu Mao**, Josep Penuelas, Lei Cheng, Ning Zeng, Sonke Zaehle, Thomas Pugh, Yaozhong Pan, Yingping Wang and Yue Li, 2016. Greening of the Earth and its drivers. *Nature Climate Change*, doi:10.1038/nclimate3004.
25. Zhang Li, **Jiafu Mao**, Xiaoying Shi, Daniel Ricciuto, Honglin He, Peter Thornton, Guirui Yu, Shijie Han, Yingnian Li, Junhua Yan, Yanbin Hao, huimin Wang, 2016, Evaluation of the Community Land Model simulated carbon and water fluxes against observations over ChinaFLUX sites, *Agricultural and Forest Meteorology*, 226-227, 174-185.
26. Sun, Y., Piao, S., Huang, M., Ciais, P., Zeng, Z., Cheng, L., Li, X., Zhang, X., **Mao, J.**, Peng, S., Poulter, B., Shi, X., Wang, X., Wang, Y.-P. and Zeng, H., 2016. Global patterns and climate drivers of water-use efficiency in terrestrial ecosystems deduced from satellite-based datasets and carbon cycle models. *Global Ecology and Biogeography*, 25(3), 311-323, doi: 10.1111/gcb.12411.
27. Huang, M.T., Piao, S., Zeng, Z., Peng, S., Philippe C., Cheng, L., **Mao, J.**, Poulter, B., Shi, X., Yaang, H., Wang, Y.P., 2016. Seasonal responses of terrestrial ecosystem water-use efficiency to climate change. *Global Change Biology*, 22, 2165-2177, doi: 10.1111/gcb.13180.
28. Wang Dali, Xiaoying Shi, Daniel Ricciuto, **Jiafu Mao** and Jens Domke, 2016. A scalable framework for global offline Community Land Model ensemble simulation. *International Journal of Computational Science and Engineering*, 12(1): 73-85, doi:10.1504/IJCSE.2016.074565.
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PRESENTATIONS

1. Anthony W. King, **Jiafu Mao**, Daniel Ricciuto and Robert J. Andres. Implications of uncertainty in fossil fuel emissions for terrestrial ecosystem modeling. April 2017, DOE Environmental System Science (ESS) PI Meeting, Potomac, MD.
2. Xiaoying Shi, Daniel M. Ricciuto, Peter E. Thornton, Paul J. Hanson, Xiaofeng Xu, **Jiafu Mao**, Jeffrey Warren, Steve Sebestyen, Natalie A. Griffiths, Richard J. Norby, Anthony P. Walker, and David J. Weston. Representing northern peatland hydrology and biogeochemistry with ALM. April 2017, DOE Environmental System Science (ESS) PI Meeting, Potomac, MD.
3. Daniel Ricciuto, Xiaoying Shi, Paul Hanson, **Jiafu Mao**, and the SPRUCE model intercomparison team. Methods and initial results for a model intercomparison study in a northern peatland. April 2017, DOE Environmental System Science (ESS) PI Meeting, Potomac, MD.
4. Binyan Yan, **Jiafu Mao**, Forrest M. Hoffman, Min Xu, and Xiaoying Shi. To what extent can variability of tropical vegetation growth be predicted using sea surface temperatures? April 2017, DOE Environmental System Science (ESS) PI Meeting, Potomac, MD.
5. **Mao Jiafu**, Wenting Fu, Whitney Forbes, Xiaoying Shi, Daniel Ricciuto, Mingzhou Jin, and Shih-Chieh Kao. Detection and attribution of the terrestrial runoff in the conterminous United States. April 2017, DOE Environmental System Science (ESS) PI Meeting, Potomac, MD.

6. Zaichun Zhu and coauthors. Greening of the Earth and its drivers. August 2017, 10th International Carbon Dioxide Conference, Interlaken, Switzerland.
7. Huang, Mengtian, Piao, Shilong, Zeng, Zhenzhong, Peng, Shushi, Ciais, Philippe, Cheng, Lei, **Mao, Jiafu**, Poulter, Ben, Shi, Xiaoying, Yao, Yitong, Yang, Hui, Wang, Yingping. Seasonal responses of terrestrial ecosystem water-use efficiency to climate change. August 2017, 10th International Carbon Dioxide Conference, Interlaken, Switzerland.
8. **Mao Jiafu** and coauthors. Driving mechanisms and feedbacks of the land greening. February 2017, Fourth Santa Fe Conference on Global and Regional Climate Change, Santa Fe, NM (**Invited**).
9. Cheng-En Yang, **Jiafu Mao**, Forrest M. Hoffman, Daniel M. Ricciuto, Joshua S. Fu, Chris D. Jones, and Nuno Carvalhais. Evaluation of extratropical forest biomass in Earth system models over the Northern Hemisphere. February 2017, Fourth Santa Fe Conference on Global and Regional Climate Change, Santa Fe, NM.
10. Binyan Yan and coauthors. Seasonally asymmetric responses of Amazon forests to El Niño. December 2016, NGEETropics ENSO research meeting, San Francisco, CA.
11. Fuyao Wang and coauthors. Advancing a model-validated statistical method for decomposing the key oceanic drivers of observed regional climate variability and evaluating model performance: focus on North African rainfall in CESM. December 2016, AGU Fall Meeting, San Francisco, CA.
12. Yan Yu and coauthors. Vegetation-rainfall feedbacks across the Sahel: a combined observational and modeling study. December 2016, AGU Fall Meeting, San Francisco, CA.
13. Mengtian Huang and coauthors. Seasonal responses of terrestrial ecosystem water-use efficiency to climate change. December 2016, AGU Fall Meeting, San Francisco, CA.
14. Cheng-En Yang, **Jiafu Mao**, Forrest M. Hoffman, Daniel M Ricciuto and Joshua S Fu. Uncertainty quantification of extratropical forest biomass in CMIP5 models over the Northern Hemisphere. December 2016, AGU Fall Meeting, San Francisco, CA.
15. Alan Di Vittorio, **Jiafu Mao** and Xiaoying Shi. Evaluating the need for integrated land use and land cover analysis for robust assessment of carbon-related climate adaptation and mitigation strategies. December 2016, AGU Fall Meeting, San Francisco, CA.
16. **Mao Jiafu** and coauthors. Human-induced greening of the northern extratropical land surface. December 2016, AGU Fall Meeting, San Francisco, CA.
17. **Mao Jiafu** and coauthors. Disentangling natural and anthropogenic controls on terrestrial evapotranspiration and vegetation growth trends, National Center for Meteorological Research at Meteorology France, November 2016, Toulouse, France (**Invited**).
18. **Mao Jiafu** and coauthors. Human-induced greening of the northern extratropical land surface. November 29-December 1, 2016. DOE Regional & Global Climate Modeling (RGCM) Program, Rockville, MD, USA.
19. **Mao Jiafu** and coauthors. Disentangling natural and anthropogenic controls on vegetation growth trends. November 2-4, 2016. Model hierarchies workshop, Princeton University, New Jersey, USA.
20. **Mao Jiafu** and coauthors. Disentangling natural and anthropogenic controls on vegetation growth trends. October 30, 2016. BGC-Feedback project meeting. ORNL, Oak Ridge, TN, USA.
21. Binyan Yan, **Jiafu Mao**, Xiaoying Shi, Robert E. Dickinson, Xiaoyang Zhang, Jin Wu and Daniel M. Ricciuto, 2016. Seasonally asymmetric responses of Amazon forests to El Niño. September 21-22, 2016, The NGEETropics annual meeting, Smithsonian S. Dillon Ripley Center, Washington DC, USA.
22. Moe Khaleel, Melissa Allen, Kate Evans, Jack Fellows, Suzy Fowler, Paul Gilna, Adam Guss, Gary Jacobs, Udaya Kalluri, **Jiafu Mao**, Anthony Palumbo, Eric Pierce, Stan Wullschleger, Thomas Zacharia, October 4, 2016, ORNL briefing on FY16 S&T goals and objectives for DOE Biological and Environmental Research, Washington DC, USA.
23. Dale Kalser, and coauthors, The national extreme events data and research center (NEED), September 14, 2016, ORNL annual meeting, Oak Ridge, TN, USA.
24. Cheng-En Yang, **Jiafu Mao**, Forrest M. Hoffman, Daniel M. Ricciuto, and Joshua S. Fu, Evaluation of forest biomass in CMIP5 models over northern high latitudes, August 16, 2016, Earth system modeling workshop, Oak Ridge, TN, USA.
25. **Mao Jiafu**, Daniel M. Ricciuto, Peter E. Thornton, Jeffrey M. Warren, Anthony W. King, Xiaoying Shi, Colleen M. Inversen and Richard J. Norby, Evaluating the Community Land Model in a pine stand with ¹³CO₂ and shading manipulations, August 7-12, 2016, ESA annual meeting, Fort Lauderdale, FL, USA.
26. **Mao Jiafu** and coauthors. Human-induced greening of the northern extratropical land surface. June 22, 2016. Terrestrial ecosystem modeling group meeting, ORNL, Oak Ridge, TN, USA.
27. **Mao Jiafu** and coauthors. Improving the representation of the human component in ACME. May 2, 2016. The “3 by 5” talk in CCSI, ORNL, Oak Ridge, TN, USA.
28. James T. Randerson and coauthors. The International Land Model Benchmarking (ILAMB) Package. May 16-18, 2016. The 2016 International Land Model Benchmarking (ILAMB) Workshop, Washington DC, USA.

29. Daniel M. Ricciuto and coauthors. Uncertainty quantification in the ACME land model. May 16-18, 2016. The 2016 International Land Model Benchmarking (ILAMB) Workshop, Washington, DC, USA.
30. **Mao Jiafu**, Whitney Forbes, Daniel M. Ricciuto, Mingzhou Jin, Xiaoying Shi, Peter E. Thornton, and Forrest M. Hoffman. A framework of detecting and attributing terrestrial ecosystem dynamics. May 16-18, 2016. The 2016 International Land Model Benchmarking (ILAMB) Workshop, Washington DC, USA (**Invited**).
31. Nate McDowell and coauthors. NGE-E-Tropics El Nino and drought impacts research. April 26-27, 2016. The 2016 Environmental System Science (ESS) PI meeting, Potomac, MD, USA.
32. **Mao Jiafu**, Whitney Forbes, Daniel M. Ricciuto, Mingzhou Jin, Xiaoying Shi, Peter E. Thornton, and Forrest M. Hoffman. A framework of detecting and attributing terrestrial ecosystem dynamics. April 26-27, 2016. The 2016 Environmental System Science (ESS) PI meeting, Potomac, MD, USA.
33. Xiaoying Shi and coauthors. Representing northern peatland hydrology and biogeochemistry with the Community Land Model. April 26-27, 2016. The 2016 Environmental System Science (ESS) PI meeting, Potomac, MD, USA.
34. **Mao Jiafu** and coauthors. Human-induced greening of the northern extratropical land surface. April 4-7, 2016, The 2016 Annual Symposium of the US International Association of Landscape Ecology (US-IALE) meeting, Asheville, NC, USA (**Invited**).
35. **Mao Jiafu**, Whitney Forbes, Daniel M. Ricciuto, Mingzhou Jin, Xiaoying Shi, Peter E. Thornton, and Forrest M. Hoffman. A framework of detecting and attributing terrestrial ecosystem dynamics. Mar 30, 2016, CCSI SAB meeting, Oak Ridge, TN.
36. Xiaoying Shi, Peter Thornton, Jae Edmonds, William Collins, Kate Calvin, Andy Jones and **Jiafu Mao**. Improving representation of human-Earth system interactions. Mar 30, 2016, CCSI SAB meeting, Oak Ridge, TN.
37. Forrest M. Hoffman, **Jiafu Mao**, Xiaojuan Yang, Nathan Collier, Xiaoying Shi, Gangsheng Wang, Min Xu and Chengen Yang. Biogeochemistry-Climate Feedbacks Scientific Focus Area. Mar 30, 2016, CCSI SAB meeting, Oak Ridge, TN.
38. **Mao Jiafu** and coauthors. Disentangling natural and anthropogenic controls on terrestrial evapotranspiration and vegetation growth trends, Mar 28, 2016. Seminar at the Yale School of Forestry & Environmental Studies, Yale University, New Haven, Connecticut, US (**Invited**).
39. Rebecca et al. CO₂ and greening observations indicate increasing light use efficiency in northern terrestrial ecosystems. April 2016, EGU Meeting, Vienna, Austria.
40. Alan Di Vittorio, **Jiafu Mao** and Xiaoying Shi. Evaluating the need for integrated land use and land cover analysis for robust assessment of climate adaptation and strategies. April 2016, EGU Meeting, Vienna, Austria.
41. Forrest M. Hoffman, **Jiafu Mao**, Xiaojuan Yang, Nathan Collier, Xiaoying Shi, Gangsheng Wang, Min Xu, and Cheng-En Yang. Biogeochemistry-Climate Feedbacks. February, 2016, CCS Directorate Advisory Committee Meeting.
42. Fuyao Wang, Michael Notaro, Yan Yu, **Jiafu Mao**, Xiaoying Shi and Yaxing Wei. Evaluating CMIP5 Models' representation of oceanic drivers of north African precipitation. January 2016, AMS 96th Annual Meeting, New Orleans, Louisiana.
43. Cheng-En Yang, **Jiafu Mao**, Forrest Hoffman, Daniel Ricciuto and Joshua Fu. Evaluation of Vegetation Biomass in CMIP5 Models over the Northern High-Latitudes. December 2015, AGU Fall Meeting, San Francisco, CA.
44. Deborah Huntzinger et al. Nitrogen Dynamics are a Key Factor in Explaining Global Land Carbon Sink. December 2015, AGU Fall Meeting, San Francisco, CA.
45. Yan Yu, Michael Notaro, Fuyao Wang, **Jiafu Mao**, Xiaoying Shi and Yaxing Wei. Observed Oceanic and Terrestrial Drivers of North African Climate. December 2015, AGU Fall Meeting, San Francisco, CA.
46. Xiaoying Shi, Daniel Ricciuto, Xiaofeng Xu, Peter Thornton, Paul Hanson, **Jiafu Mao**, Steven Sebestyen and Natalie Griffiths. Representing Northern Peatland Hydrology and Biogeochemistry within the Community Land Model. December 2015, AGU Fall Meeting, San Francisco, CA.
47. Rui Mei, Daniel Ricciuto, **Jiafu Mao**, Forrest Hoffman and Jitendra Kumar. Sensitivity of land surface modeling to parameters: An uncertainty quantification method applied to the Community Land Model. December 2015, AGU Fall Meeting, San Francisco, CA.
48. Alan Di Vittorio, **Jiafu Mao** and Xiaoying Shi. The Influence of Historical Land Use and Land Cover Change Assumptions, CO₂ Fertilization, and Nitrogen Deposition on Global Carbon Balance in an Earth System Model. December 2015, AGU Fall Meeting, San Francisco, CA.
49. Michael Notaro, Fuyao Wang, Yan Yu, **Jiafu Mao**, Xiaoying Shi and Yaxing Wei. Evaluating CMIP5 Models' Representation of Oceanic Drivers of North African Climate. December 2015, AGU Fall Meeting, San Francisco, CA.

50. **Mao Jiafu** et al. Disentangling climatic and anthropogenic controls on global terrestrial evapotranspiration trends. December 2015, AGU Fall Meeting, San Francisco, CA.
51. Mingquan Mu, Forrest Hoffman, David Lawrence, William Riley, Gretchen Keppel-Aleks, Charles Koven, Erik Kluzek, **Jiafu Mao** and James Randerson. Design and application of a community land benchmarking system for earth system models. December 2015, AGU Fall Meeting, San Francisco, CA.
52. Mengtian Huang, Shilong Piao, Yan Sun, Philippe Ciais, Lei Cheng, **Jiafu Mao**, Ben Poulter, Xiaoying Shi, Zhenzhong Zeng, and Yingping Wang. Change in terrestrial ecosystem water-use efficiency over the last three decades. December 2015, AGU Fall Meeting, San Francisco, CA.
53. Xiaoying Shi, **Jiafu Mao**, Zhenzhong Zeng, Peter Thornton, Forrest Hoffman and Daniel Ricciuto. Biophysical feedbacks of vegetation to the global climate change for the past three decades. Nov., 2015, ACME meeting, Albuquerque, New Mexico.
54. **Mao Jiafu**, Cheng-En Yang, Forrest M. Hoffman, Daniel M. Ricciuto, and Joshua S. Fu, Evaluation of the forest biomass in CMIP5 models over the northern high-latitudes, Oct. 20-23, 2015, EMBRACE-CMIP Analysis and Modelling Workshop, Dubrovnik, Croatia.
55. **Mao Jiafu**. Human-induced greening of the northern high-latitude land surface, Sep 18, 2015, the Nelson Institute Center for Climatic Research (CCR) Climate, People, and the Environment Program (CPEP) seminar, University of Wisconsin-Madison, Madison, US (**Invited**).
56. **Mao Jiafu**, Daniel M. Ricciuto and Xiaoying Shi, Sensitivity of land-atmosphere fluxes to biogeophysical and biogeochemical parameters in the Community Land Model, Aug 9-14, 2015, ESA Annual Meeting, Baltimore, MD.
57. **Mao Jiafu**, Daniel M. Ricciuto, Peter E. Thornton, Jeffrey M. Warren, Anthony W. King, Xiaoying Shi, Colleen M. Inversen and Richard J. Norby, Evaluating the Community Land Model in a pine stand with $^{13}\text{CO}_2$ and shading manipulations, June 23-24, 2015, ORNL TES-SFA Triennial Review, Gaithersburg, MD.
58. Cheng-En Yang, Jiafu Mao, Forrest M. Hoffman, Daniel M. Ricciuto and Joshua S. Fu, Evaluation of the vegetation biomass in the CMIP5 models over the northern high-latitudes. June 9, 2015, CCSI Earth system modeling workshop, Oak Ridge, TN.
59. Alan Di Vittorio and **Jiafu Mao**. Evaluating the effects of different historical land use/cover trajectories on terrestrial carbon. June 2015, the 20th Annual CESM Workshop, Breckenridge, CO.
60. **Mao Jiafu**. Theme Chair. Observations: what trends have we identified in regional and global ET, GPP and GPP/ET?, May 26, 2015, International workshop on “Quantifying uncertainties in land surface models”, Beijing Normal University, Beijing, China.
61. **Mao Jiafu**. Impacts of natural and human forcings on the global land evapotranspiration and vegetation growth, May 26, 2015, International workshop on “Quantifying uncertainties in land surface models”, Beijing Normal University, Beijing, China (**Invited**).
62. Daniel M. Ricciuto and **Mao Jiafu**. Sensitivity of the Community Land Model to biogeochemical and biogeophysical parameters, May 26, 2015, International workshop on “Quantifying uncertainties in land surface models”, Beijing Normal University, Beijing, China.
63. Lianhong Gu et al., Climate variability as a key factor for model improvement: insights from observed and modeled ecosystem functional responses to precipitation regimes and associated stresses in a central US forest. April 28-29, 2015, Environmental System Science Principal Investigator (PI) Meeting, Potomac, MD, USA.
64. Daniel M. Ricciuto et al., Sensitivity of Community Land Model carbon fluxes and biomass to parameters. April 28-29, 2015, Environmental System Science Principal Investigator (PI) Meeting, Potomac, MD, USA.
65. Xiaoying Shi, Peter E. Thornton, Daniel M. Ricciuto, Paul J. Hanson, **Jiafu Mao**, Stephen D. Sebestyen, Natalie A. Griffiths, and Gautam Bisht, Representing northern peatland microtopography and hydrology within the Community Land Model. April 28-29, 2015, Environmental System Science Principal Investigator (PI) Meeting, Potomac, MD, USA.
66. **Mao Jiafu**, Daniel M. Ricciuto, Peter E. Thornton, Jeffrey M. Warren, Anthony W. King, Xiaoying Shi, Colleen M. Inversen and Richard J. Norby. Evaluating the Community Land Model in a pine stand with $^{13}\text{CO}_2$ and shading manipulations, April 28-29, 2015, Environmental System Science Principal Investigator (PI) Meeting, Potomac, MD, USA.
67. **Mao Jiafu** et al., Disentangling Climatic and Anthropogenic Controls on Global Terrestrial Evapotranspiration Trends. April 9, 2015, CCSI SAB meeting, Oak Ridge, TN.

68. Yaxing Wei et al., The North American Carbon Program Multi-scale Synthesis and Terrestrial Model Intercomparison Project: Environmental driver data. April 9, CCSI SAB meeting, Oak Ridge, TN.
69. Cheng-En Yang, Jiafu Mao, Forrest M. Hoffman, Daniel M. Ricciuto and Joshua S. Fu, Evaluation of the vegetation biomass in the CMIP5 models over the northern high-latitudes. April 9, 2015, CCSI SAB meeting, Oak Ridge, TN.
70. Xiaoying Shi, Peter E. Thornton, Daniel M. Ricciuto, Paul J. Hanson, **Jiafu Mao**, Stephen D. Sebestyen, Natalie A. Griffiths, and Gautam Bisht, Representing northern peatland microtopography and hydrology within the Community Land Model. April 9, 2015, CCSI SAB meeting, Oak Ridge, TN.
71. Alan Di Vittorio et al., From Land Use to Land Cover: Restoring the Afforestation Signal in a Coupled Integrated Assessment - Earth System Model and the Implications for CMIP5 RCP Simulations. April 12-17, 2015, European Geosciences Union General Assembly, Vienna, Austria.
72. Alan Di Vittorio et al., The effects of land unit boundaries on GCAM land use and cover, March 2-4, 2015, Boulder, Colorado.
73. **Mao Jiafu** et al., How anthropogenic effects modulate the climate-dominated land evapotranspiration. CESM land model and biogeochemistry working group meetings, March 2-4, 2015, Boulder, Colorado.
74. Yuanyuan Fang et al., Can terrestrial biosphere models capture the response of atmospheric CO₂ growth rate to ENSO? Jan. 26-29, 2015, NACP and AmeriFlux Joint Meeting, Washington D.C.
75. Yaxing Wei et al., The North American Carbon Program Multi-scale Synthesis and Terrestrial Model Intercomparison Project: Environmental driver data. Jan. 26-29, 2015, NACP and AmeriFlux Joint Meeting, Washington D.C.
76. Daniel M. Ricciuto et al., Biogeophysical controls on land-atmosphere fluxes in the Community Earth System Model. Jan. 26-29, 2015, NACP and AmeriFlux Joint Meeting, Washington D.C.
77. Yuanyuan Fang et al., Can terrestrial biosphere models capture the response of atmospheric CO₂ growth rate to ENSO? December 2014, AGU Fall Meeting, San Francisco, CA.
78. Deborah Huntzinger et al., Trends in the Global Net Land Sink and Their Sensitivity to Environmental Forcing Factors: Results From the Multi-Scale Synthesis and Terrestrial Model Intercomparison Project (MsTMIP). December 2014, AGU Fall Meeting, San Francisco, CA.
79. Daniel Hayes et al., Model and Inventory Perspectives on the Role of Forests in the Global Carbon Cycle: Results from the Multi-scale Synthesis and Terrestrial Model Intercomparison Project (MsTMIP). December 2014, AGU Fall Meeting, San Francisco, CA.
80. Alan Di Vittorio et al., From Land Use to Land Cover: Restoring the Afforestation Signal in a Coupled Integrated Assessment - Earth System Model and the Implications for CMIP5 RCP Simulations. December 2014, AGU Fall Meeting, San Francisco, CA.
81. Daniel M. Ricciuto et al., Biogeophysical controls on land-atmosphere fluxes in the Community Earth System Model. December 2014, AGU Fall Meeting, San Francisco, CA.
82. Li Zhang et al., Evaluation of the Community Land Model simulated carbon and water fluxes against observations over ChinaFLUX sites. December 2014, AGU Fall Meeting, San Francisco, CA.
83. Xiaoying Shi et al., Investigating the biogeophysical impacts of land cover change on future climate. December 2014, AGU Fall Meeting, San Francisco, CA.
84. Shilong Piao et al., Evidence for A Weakening Relationship between Interannual Temperature Variability and Northern Vegetation Activity. December 2014, AGU Fall Meeting, San Francisco, CA.
85. Jiafu Mao et al., Dynamics of global vegetation biomass simulated by the integrated Earth System Model. December 2014, AGU Fall Meeting, San Francisco, CA.
86. Zhenzhong Zeng et al., A Worldwide Analysis of Spatiotemporal Changes in Water Balance-based Evapotranspiration from 1982 to 2009. December 2014, AGU Fall Meeting, San Francisco, CA.
87. **Mao Jiafu**, Xiaoying Shi, Peter E. Thornton, Binyan Yan and Wenting Fu. The impact of natural and human forcings on the global terrestrial hydrology cycle and vegetation dynamics for the past 3 decades, Oct 24, 2014, Department of Industrial and Systems Engineering Graduate Seminar, The University of Tennessee at Knoxville, Knoxville, US (**Invited**).
88. **Mao Jiafu**, Binyan Yan, Xiaoying Shi, Peter E. Thornton and Forrest M. Hoffman. Global vegetation growth tendencies during the past 3 decades: a study with multiple satellite LAI products and model simulations, May 18-22, 2014, The 2014 Annual Symposium of the US International Association of Landscape Ecology (US-IALE) meeting, Anchorage, Alaska, USA (**Invited**).
89. **Mao Jiafu**, Binyan Yan, Xiaoying Shi, Peter E. Thornton, Forrest M. Hoffman and David M. Lawrence. Synthesis of long-term remote sensing LAI for applications in Land Surface and Earth System Models: Homogenization and intercomparison, May 16, 2014, BGC Feedbacks SFA Review Meeting, Washington DC, USA.
90. **Mao Jiafu**, Binyan Yan, Xiaoying Shi, Peter E. Thornton, Forrest M. Hoffman and David M. Lawrence.

Synthesis of long-term remote sensing LAI for applications in Land Surface and Earth System Models: Homogenization and intercomparison, May 12-14, 2014, Integrated Climate Modeling Principal Investigator Meeting, Washington DC, USA.

91. **Mao Jiafu**, Daniel M. Ricciuto, Peter E. Thornton, Jeffrey M. Warren, Anthony W. King, Xiaoying Shi, Colleen M. Inversen and Richard J. Norby. Evaluating the Community Land Model in a pine stand with $^{13}\text{CO}_2$ and shading manipulations, May 6-7, 2014, Terrestrial Ecosystem Science (TES)-Subsurface Biogeochemical Research (SBR) Joint Investigators Meeting, Washington DC, USA.
92. Shi Xiaoying, Peter E. Thornton, Daniel M. Ricciuto, Paul J. Hanson and **Jiafu Mao**. Development and testing the hydrological dynamics of vegetated wetland for CLM, May 12-14, 2014, Integrated Climate Modeling Principal Investigator Meeting, Washington DC, USA.
93. Daniel M. Ricciuto, **Jiafu Mao**, Xiaoying Shi, Peter E. Thornton, and NACP site interim synthesis participants. Performance of the Community Land Model at AmeriFlux and FLUXNET sites, May 6-7, 2014, Terrestrial Ecosystem Science (TES)-Subsurface Biogeochemical Research (SBR) Joint Investigators Meeting, Washington DC, USA.
94. Roisin Langan, R. Archibald, R. Mei, M. Plumlee, C. Yang, S. Mahajan, **Jiafu Mao**, D. Ricciuto, X. Shi and J. Fu. Stochastic parameterization for extreme precipitation in Climate Models. March 31-April 3, 2014, SIAM Conference on Uncertainty Quantification, Savannah, Georgia, USA.
95. Alan Di Vittorio, Louise Chini, Ben Bond-Lamberty, **Jiafu Mao** Xiaoying Shi, John Truesdale. From land use to land cover: Restoring the afforestation signal in GCAM to CESM land coupling and the implications for CMIP5 RCP simulations. February 2014, SDWG Winter Meetings, Boulder, CO.
96. Peter E. Thornton, Ben Bond-Lamberty, Kate Calvin, Louise Chini, Bill Collins, Tony Craig, Alan Di Vittorio, Jae Edmunds, George Hurtt, Andy Jones, **Jiafu Mao**, Xiaoying Shi, Allison Thomson, John Truesdale. The influence of prognostic land use and land cover change representations in CESM simulations over the period 1850-2100. February 2014, SDWG Winter Meetings, Boulder, CO.
97. **Mao Jiafu**, Binyan Yan, Xiaoying Shi, Peter E. Thornton, Forrest M. Hoffman and David M. Lawrence. Synthesis of long-term remote sensing LAI for applications in land surface and earth system models: Homogenization and intercomparison. February 2014, CESM Land Model and Biogeochemistry Working Group Meetings, Boulder, CO.
98. **Mao Jiafu**, Binyan Yan, Xiaoying Shi, Peter E. Thornton, Forrest M. Hoffman, Shilong Piao, Shunlin Liang and David M. Lawrence. Synthesis of remote sensing LAI for benchmark of global land surface models. Part 1: Homogenization and intercomparison. December 2013, AGU Fall Meeting, San Francisco, CA.
99. R. Langan, R. Archibald, S. Mahajan, D. Ricciuto, C. Yang, R. Mei, **Jiafu Mao** and Xiaoying Shi. Stochastic Parameterization for extreme precipitation. December 2013, AGU Fall Meeting, San Francisco, CA.
100. Jianguan Tan, Xuhui Wang, **Jiafu Mao**, Xiaoying Shi, Shushi Peng, Zhenzhong Zeng and Shilong Piao. Detection and attribution of vegetation growth change in China during the last thirty years. December 2013, AGU Fall Meeting, San Francisco, CA.
101. Xiaoying Shi, Peter E. Thornton, Daniel M. Ricciuto, Paul J. Hanson and **Jiafu Mao**. Development and testing the hydrological dynamics of vegetated wetland for CLM. December 2013, AGU Fall Meeting, San Francisco, CA.
102. Jeff Warren and coauthors. Partitioning in Trees and Soils (PiTS): A field research facility for testing dynamic carbon partitioning representations within global models. August 2013, the 98th Ecological Society of America (ESA) Annual Meeting, Minneapolis MN.
103. **Mao Jiafu** and coauthors. Global estimation of CMIP5 Earth System Models in simulating Leaf Area Index against remote-sensing products. June 2013, the 18th Annual CESM Workshop, Breckenridge, CO.
104. Xiaoying Shi and coauthors. Development and testing the hydrological dynamics of vegetated wetland for CLM. June 2013, the 18th Annual CESM Workshop, Breckenridge, CO.
105. R. Archibald, S. Mahajan, Jiafu Mao, B. Mayer, R. Mei, D. Ricciuto, X. Shi. Parameterization of the Influence of Sub-grid Scale Land Heterogeneity on Convection in a Climate Model. June 2013, the 18th Annual CESM Workshop, Breckenridge, CO.
106. AV Di Vittorio, B Bond-Lamberty, **Jiafu Mao**, LP Chini, J Truesdale, X Shi, ML Branstetter, W Collins, P Thornton, J Edmonds, A Thomson, GC Hurtt, K Calvin, A Jones and T Craig. iESM update: New land-use coupling and initial results of a fully-coupled experiment. June 2013, the 18th Annual CESM Workshop, Breckenridge, CO.
107. Daniel M. Ricciuto, **Jiafu Mao**, Xiaoying Shi, Daniel J. Hayes, Anthony W. King, Peter E. Thornton. Modeling the terrestrial carbon cycle at regional to global scales: Parameter sensitivity and evaluation against benchmarks. May 2013, TES/SBR Joint Principal Investigator's Meeting, Washington DC.
108. Xiaoying shi et al. Development and testing the hydrological dynamics of vegetated wetland for CLM. May 2013, TES/SBR Joint Principal Investigator's Meeting, Washington DC.

109. **Mao Jiafu** and coauthors. Global estimation of CMIP5 Earth System Models in simulating Leaf Area Index against remote-sensing products. April 2013, a special symposium entitled “Phenology for Disturbance Detection and Monitoring” at the 2013 US International Association of Landscape Ecology (US-IALE) meeting, Austin, Texas (**Invited**).
110. Xiaoying Shi, Wilfred M. Post, Peter E. Thornton **Jiafu Mao**, and Daniel M. Ricciuto. Evaluation and improvement of CLM4 litterfall and littermass based on the observed database. March 2013, CCSI SAB meeting, Oak Ridge, TN.
111. **Mao Jiafu**, Xiaoying Shi, Peter E. Thornton, Forrest M. Hoffman, Zaichun Zhu, and Ranga B. Myneni. Global latitudinal-asymmetric vegetation growth trends and their driving mechanisms: 1982-2009. March 2013, CCSI SAB meeting, Oak Ridge, TN.
112. Daniel Ricciuto and coauthors. Sensitivity of site-level CLM4 simulations to input meteorology. February 2013, CESM Land Model and Biogeochemistry Working Group Meetings, Boulder, CO. D
113. **Mao Jiafu**. Global simulations, evaluations and applications of CLM4 at ORNL. February 2013, CESM Land Model and Biogeochemistry Working Group Meetings, Boulder, CO.
114. **Mao Jiafu**, Daniel Ricciuto, Peter Thornton, Jeffrey Warren, Richard Norby, Colleen Iversen. Performance of simulated C partitioning within CLM4 based on ¹³CO₂ and shading manipulations in a pine stand. February 2013, CESM Land Model and Biogeochemistry Working Group Meetings, Boulder, CO.
115. **Mao Jiafu**, Peter Thornton, Xiaoying Shi, Daniel Ricciuto, Gangsheng Wang, Paul J. Hanson. The development of CLM4 two-layer soil biogeochemical model using EBIS observations. February 2013, CESM Land Model and Biogeochemistry Working Group Meetings, Boulder, CO.
116. Daniel Ricciuto, Anthony King, **Jiafu Mao**, Peter Thornton. An ensemble global carbon cycle modeling framework for calibration and uncertainty quantification. February 2013, 4th NACP All-Investigators Meeting, Albuquerque, NM.
117. Xiaoying Shi, Wilfred Post, Peter Thornton, **Jiafu Mao**. Evaluation of CLM4 litterfall based on the observed database. February 2013, 4th NACP All-Investigators Meeting, Albuquerque, NM.
118. **Mao Jiafu**, Daniel Ricciuto, Peter Thornton, Jeffrey Warren, Richard Norby, Colleen Iversen. Performance of simulated C partitioning within CLM4 based on ¹³CO₂ and shading manipulations in a pine stand. February 2013, 4th NACP All-Investigators Meeting, Albuquerque, NM.
119. Xiaoying Shi, **Jiafu Mao**, Peter E. Thornton, Forrest M. Hoffman. Spatiotemporal pattern of CLM4 simulated evapotranspiration in response to multifactor environmental changes. December 2012, AGU Fall Meeting, San Francisco, CA.
120. **Mao Jiafu**, Xiaoying Shi, Peter E. Thornton, Forrest M. Hoffman. Global latitudinal-asymmetric vegetation growth trends and their driving mechanisms over the past three decades. December 2012, AGU Fall Meeting, San Francisco, CA.
121. Peter E. Thornton, James A. Edmonds, William Collins, Anthony C. Janetos, George C. Hurtt, Xiaoying Shi, **Jiafu Mao**, Allison M. Thomson, Katherine V. Calvin, Ben P. Bond-Lamberty, Louise P. Chini. Influence of Human-Climate System Feedbacks on Predicted 21st Century Land Use/Land Cover Trajectories, Fossil Fuel Emissions, and Climate Change. December 2012, AGU Fall Meeting, San Francisco, CA.
122. Hoffman, Forrest M., James T. Randerson, and **Jiafu Mao**. “Using Remotely-sensed Data Sets for Model Evaluation and Benchmarking.” ForestSAT 2012 (September 11–14, 2012), Oregon State University, Corvallis, Oregon, USA (**Invited**).
123. **Mao Jiafu**. September 2012, the eleventh CTWF (which is organized by Chinese Academy of Sciences (CAS), Third World Academy of Sciences (TWAS), World Meteorological Organization (WMO).) international workshop on “Terrestrial Ecosystems under the Changing Climate”, Beijing, China (**Invited**).
124. **Mao Jiafu** and coauthors. Remote sensing evaluation of CLM4. January 2012, CCSI SAB meeting, Oak Ridge, TN
125. **Mao Jiafu** and coauthors. Remote sensing evaluation of CLM4. April 2012, TES Principal Investigator’s Meeting, Washington DC.
126. **Mao Jiafu** et al. Simulation and improvement of CLM4 based on ¹³CO₂ and shading manipulations in a pine stand. April 2012, TES Principal Investigator’s Meeting, Washington DC.
127. Xiaoying Shi, **Mao, J.** and coauthors. The impact of climate change, CO₂, nitrogen deposition and land use change on contemporary global river flow. April 2012, TES Principal Investigator’s Meeting, Washington DC.
128. Jeff Warren and coauthors. Partitioning in Trees and Soils (PiTS): A field research facility for testing dynamic carbon partitioning representations within global models. April 2012, TES Principal Investigator’s Meeting, Washington DC.

129. Hayes et al. Global carbon cycle model development, application and evaluation. April 2012, TES Principal Investigator's Meeting, Washington DC.
130. **Mao Jiafu** and coauthors. Two-layer treatment of litter and soil organic matter pools and fluxes for CLM. February 2012, Joint Land, Biogeochemistry, and Chemistry-Climate Working Groups NCAR, Boulder, CO.
131. **Mao Jiafu** and coauthors. Comparison of CLM predicted GPP, LAI, and NDVI against remote sensing-based estimates. February 2012, Joint Land, Biogeochemistry, and Chemistry-Climate Working Groups NCAR, Boulder, CO.
132. Thornton, P.E., **Mao, J**, Shi, X. and coauthors Influence of prognostic land use on 21st century climate prediction. December 2011, AGU Fall Meeting (**Invited**).
133. **Mao Jiafu**, Xiaoying Shi, Peter E. Thornton, Shilong Piao and Xuhui Wang. Causes of spring vegetation growth in the northern mid-high latitudes from 1982 to 2004. December 2011, AGU Fall Meeting, San Francisco, CA.
134. Jones, A. D., Collins, W.D., Edmonds, J., Torn, M.S., Janetos, A.C., Calvin, K., Thomson, A., Chini, L., **Mao, J.**, Shi, X., Thornton, P., Hurtt, G. C. and Wise, M. Greenhouse gas policy influences climate via direct effects of land-use change. December 2011, AGU Fall Meeting, San Francisco, CA.
135. Xiaoying Shi, **Mao, J.** et al. Runoff of the 20th and 21st centuries simulated by CESM1. December 2011, AGU Fall Meeting, San Francisco, CA.
136. **Mao Jiafu** and coauthors. Remote sensing evaluation of CLM4. June 2011, the 16th Annual CESM Workshop, Breckenridge, CO.
137. **Mao Jiafu** and coauthors. The impact of climate, CO₂, nitrogen deposition and land use change on simulated contemporary global river flow. March 2011, CESM Land Model Working Group Meeting, Boulder, CO.
138. **Mao Jiafu** and coauthors. ORNL progress in the IESM project. March 2011, CESM Land Model Working Group Meeting, Boulder, CO.
139. **Mao Jiafu** and coauthors. Remote sensing evaluation of CLMCN GPP. December 2010, AGU Fall Meeting, San Francisco, CA.
140. **Mao Jiafu** and coauthors. The progress of prognostic land use and land cover change in CESM1. June 2010, the 15th Annual CCSM Workshop, Breckenridge, CO.
141. US-China Workshop on the Climate-Energy Nexus, Oak Ridge, USA, November 11 to November 13, 2009.
142. North American Carbon Program Second Joint Workshop Site-level Interim Synthesis Regional and Continental Interim Synthesis, Oak Ridge, USA, November 9 to November 11, 2009.
143. **Mao Jiafu** and coauthors. Improvements of a dynamic global vegetation model and simulations of carbon and water from stand point to region. August 2006, International Conference on Regional Carbon Budgets, Beijing, China.
144. The international summer school of Climate Change Science for International Graduate Students, Beijing, China, July 30 to August 12, 2006.
145. **Mao Jiafu** and coauthors. Improvements of a dynamic global vegetation model and simulations of carbon and water at an upland-oak forest. July 2006, the University Allied Workshop for Climate and Environmental Modeling (UAW), Taiwan.
146. **Mao Jiafu** and coauthors. Perspective of Dynamic Global Vegetation Models and Their Coupling with Climate System Model. May 2006, the forth allied workshop of LASG/CAS and Nanjing University on the development of climate system model, Shaoxing, China.
147. **Mao Jiafu** and coauthors. The sensitivity of a dynamic global vegetation model to historical climate variability and CO₂ in the conterminous China. November 2005, the forth CTWF (which is organized by Chinese Academy of Sciences (CAS), Third World Academy of Sciences (TWAS), World Meteorological Organization (WMO).) international workshop on Land Surface Models and Their Applications, Zhuhai, China.
148. **Mao Jiafu** and coauthors. Coupling of an Atmosphere-Vegetation Interaction Model (AVIM) to a New Generation Grid Point Atmospheric General Circulation Model (GAMIL). July 2004, the 8th meeting of Chinese outstanding youth scientist of atmospheric science, Chengdu Province, China.
149. **Mao Jiafu** and coauthors. Land surface models and their coupling with GCM. September 2003, the workshop of '973' project of large dataset management, Hunan Province, China.

TECHINICAL SKILLS

- Familiar with the structure and operation of iESM, CSIRO Mk3L, CESM, CLM, NCAR-DGVM, CoLM (Common Land Model), AVIM, LPJ, SDGVM, M-SDGVM, ED, ED-JULES, ACME, ALM, and iLAMB.
- Working knowledge of various operation systems and softwares such as LINUX, Windows operating systems, Fortran, C Language, NCL, Ferret, MatLab, Origin and R
- Good experience in large dataset management, utilization, diagnostics and visualization.

GRADUATE AND POSTDOCTORAL ADVISORS

Postdoctoral Advisor in US: Peter E. Thornton (ORNL)

Postdoctoral Advisor in Australia: Andrew J. Pitman (UNSW)

Graduate Advisor in China: Bin Wang (LASG/IAP) and Yongjiu Dai (BNU)

Graduate Advisees and Summer Students

Kai Wang (U. Texas at Austin); Binyan Yan (U. Texas at Austin); Wenting Fu (U. Texas at Austin); Xuebin Yang (U. Texas at Austin); Yan Yu (U. Wisconsin Madison); Whitney Leeann Forbes (U. Tennessee at Knoxville); Lingcheng Li (U. Texas at Austin); Lin Meng (Iowa State U.)

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