
CURRICULUM VITAE

Mingjie Shi

Carbon Cycle & Ecosystems Group, NASA Jet Propulsion Laboratory
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EDUCATION

Ph.D., Geological Sciences August 2013
Jackson School of Geosciences, The University of Texas at Austin

Master of Science, Meteorology June 2008
Institute of Atmospheric Physics, Chinese Academy of Sciences (CAS)

Bachelor of Science, Applied Meteorology June 2005
Department of Applied Meteorology, China Agricultural University (CAU)

RESEARCH INTERESTS

Climate Modeling, Land-Surface Modeling, Land–Atmosphere Interactions,
Carbon Cycle, Nitrogen Cycle, Vegetation Dynamics, Terrestrial Hydrology, Remote Sensing

PROFESSIONAL EXPERIENCE

- Assistant Researcher, JIFRESSE, UCLA/Carbon Cycle & Ecosystems Group, NASA Jet Propulsion Laboratory (April 2017–present)
- Postdoctoral Scholar, Carbon Cycle & Ecosystems Group, NASA Jet Propulsion Laboratory, California Institute of Technology (November 2015–April 2017)
- Postdoctoral Scholar, JIFRESSE, UCLA/Carbon Cycle & Ecosystems Group, NASA Jet Propulsion Laboratory (March 2014–October 2015)
- Visiting Independent Advisor, Carbon Cycle & Ecosystems Group, NASA Jet Propulsion Laboratory, (June 2013–February 2014)
- Graduate Research Assistant, Jackson School of Geosciences, The University of Texas at Austin, (September 2008–May 2013)
- Visiting Scientist, The National Center for Atmospheric Research (NCAR) (July 2010)
- Graduate Research Assistant, Institute of Atmospheric Physics, CAS (2005–2008)

TEACHING EXPERIENCE

- Cal State, LA: Guest lecturer, September 13th, 2018.
- The University of Texas at Austin (Austin, Texas): Department of Geological Sciences, graduate course GEO 391 Land Atmosphere Interaction Dynamics, substitute lecturer, 12 October, 15 October, and 17 October, 2012.

PROFESSIONAL ACTIVITIES

- Member of the American Geophysical Union (2009–present)
- Outstanding Student Paper Awards Judge for the American Geophysical Union Meeting (2014, 2017)
- Reviewer for scientific journals: Journal of Geophysical Research, Climate Change, Earth and Space Science, Journal of Meteorology Research, Advances in Atmospheric Science, Global Change Biology, Ecological Modeling, Geoscientific Model Development, Environmental Pollution, Biogeosciences
- Proposal Panel Review: NASA Earth and Space Science Fellowship (2018)

PUBLICATIONS

1. **Shi, M.**, Fisher, J. B., Phillips, R. R., Brzostek, E. R., 2019, Neglecting Plant-microbe Symbioses Leads to Underestimation of Modeled Climate Impacts, *Biogeosciences*, 16, 457–465.
2. Lawrence D. M., et al. inc. **Shi, M.**, 2018, Technical Description of version 5.0 of the Community Land Model (CLM), Technical Note National Center for Atmospheric Research, Boulder, CO, http://www.cesm.ucar.edu/models/cesm2/land/CLM50_Tech_Note.pdf.
3. **Shi, M.**, Liu, J., Zhao, M., Yu, Y., Saatchi, S., 2017, Mechanistic Processes Controlling Persistent Changes of Forest Canopy Structure After 2005 Amazon Drought, *J. Geophys. Res. Biogeosciences*, 122, 3378–3390 (**Eos Editors' Highlights**).
4. Anisimov, A., Tao, W., Stenchikov, G. L., Kalenderski, S., Prakash, J., Yang, Z.-L., **Shi, M.**, 2017, Quantifying local-scale dust emission from the Arabian Red Sea coastal plain, *Atmos. Chem. Phys.*, 17, 993–1015.
5. **Shi, M.**, Fisher, J. B., Brzostek, E. R., Phillips R. P., 2016, Carbon cost of plant nitrogen acquisition: global carbon cycle impact from an improved plant nitrogen cycle in the Community Land Model, *Global Change Biology*, 22, 1299–1314.
6. **Shi, M.**, Yang, Z.-L., Stenchikov, G. L., Parajuli, S. P., Tao, W., Kalenderski, S., 2016, Quantifying the impacts of landscape heterogeneity and model resolution on dust emissions in the Arabian Peninsula, *Environmental Modeling and Software*, 78, 106–119.
7. Christoffersen, B. O. et al. inc. **Shi, M.**, 2014, Mechanisms of water supply and vegetation demand govern the seasonality and magnitude of evapotranspiration in Amazonia and cerrado, *Agricultural and Forest Meteorology*, 191, 33–50.
8. **Shi, M.**, Yang, Z.-L., Lawrence, D. M., Dickinson, R. E., Subin, Z. M., 2013, Spin-up processes in the Community Land Model version 4 with explicit carbon and nitrogen components, *Ecological Modelling*, 263, 308–325.
9. **Shi, M.**, Yang, Z.-L., Landerer, F. W., 2013, Representing and evaluating the landscape freeze/thaw properties and their impacts on soil impermeability–hydrological processes in the Community Land Model version 4, *J. Geophys. Res. Atmos.*, 118, 7542–7557.
10. de Goncalves, L. G. G. et al. inc. **Shi, M.**, 2013, Overview of the Large-Scale Biosphere-Atmosphere Experiment in Amazônia Data Model Intercomparison Project (LBA-DMIP), *Agricultural and Forest Meteorology*, 182–183, 111–127.
11. von Randow, C. et al. inc. **Shi, M.**, 2013, Inter-annual variability of carbon and water fluxes in Amazonian forest Cerrado and pasture sites, as simulated by terrestrial biosphere models, *Agricultural and Forest Meteorology*, 182–183, 145–155.
12. **Shi, M.**, Yan, X., Jia, G., 2008, Advances in Researching Biogenic Volatile Organic Compounds Emissions, *Advances in Earth Science*, 23(8), 866–873.

HONORS AND AWARDS

- Brundrett Endowed Presidential Scholarship 2010–2011
- DeFord Field Scholarship 2010
- CAU Excellent Student Second Prize Scholarship 2002–2004
- Sinochem First Class Scholarship of Excellence 2003
- CAU Outstanding Student 2003

SKILLS

Computer skills

- Very good working knowledge of Unix environments (i.e., workstations, supercomputers), NCAR Command Language (NCL), Fortran, Shell, Matlab
- Programming experience in Grid Analysis and Display System (GrADS), Interactive Data Language (IDL), parallel computing, and ArcGIS

Datasets

- Moderate Resolution Imaging Spectroradiometer (MODIS)
- Special Sensor Microwave/Imager (SSM/I) observed landscape freeze/thaw Earth System Data Record (FT-ESDR)
- Gravity Recovery and Climate Experiment (GRACE) observed terrestrial water storage variations
- Soil Moisture Active Passive (SMAP) products
- SeaWinds Scatterometer onboard QuikSCAT (QSCAT) observations
- Orbiting Carbon Observatory-2 (OCO-2) observed solar-induced fluorescence (SIF)
- Tropospheric Emission Spectrometer (TES) H₂O/HDO observations

Models

- Very familiar with the Community Land Model (CLM), the Community Atmosphere Model (CAM), and the Community Earth System Model (CESM)
- Modeling experience in the Weather Research & Forecasting Model (WRF), the Ecosystem Demography (ED) model, and the FAREAST model (forest gap model)