Junjie Liu

Professional experience

- Visiting Associate, Aug 2018-, Caltech
- Research Scientist, Feb 2011-: Jet Propulsion Laboratory, Caltech
- Assistant Researcher, Feb 2010-Feb2011: University of California, Berkeley
- Research associate, Feb 2008-Feb 2010: University of California, Berkeley
- Research associate, Dec 2007-Feb 2008: University of Maryland-College Park

Education

- Ph. D, December 2007: University of Maryland-College Park.
- M. S., Spring 2003: Nanjing Institute of Meteorology, China
- B. S., 2000: Nanjing Institute of Meteorology, China.

Honors and Awards

- NASA Exceptional Achievement medal (2018)
- JPL Ed Stone Award (2018)
- JPL Voyager Award (2017)
- NASA early career achievement award (2015)
- NASA Group Achievement Award, Carbon Monitoring System Flux Pilot Project Team (2013)
- Best Ph. D thesis award in Atmospheric and Oceanic Science department, University of Maryland, 2007
- Second place student paper award for "Application of Local Ensemble Transform Kalman Filter: Perfect model experiments with NASA fvGCM" in AMS 86th annual meeting held in Atlanta, GA, Jan. 28-Feb. 3, 2006

Selected Publications

Year 2020 and 2021

Xu, Liang, Sassan S Saatchi, Yan Yang, Yifan Yu, Julia Pongratz, A Anthony Bloom, Kevin Bowman, J. Worden, **J. Liu**, et al. 2021. "Changes in Global Terrestrial Live Biomass over the 21st Century." *Science Advances* 7 (27): eabe9829. https://doi.org/10.1126/sciadv.abe9829.

Chen, Z., Huntzinger, D. N., **Liu, J**., ..., and Miller, S. M.: Five years of variability in the global carbon cycle: comparing an estimate from the Orbiting Carbon Observatory-2 and process-based models, *Environ. Res. Lett.* **16** 054041

Worden, J., Saatchi, S., Keller, M., Bloom, A., **Liu, J.,** Parazoo, N., et al. (2021). Satellite observations of the tropical terrestrial carbon balance and interactions with the water cycle during the 21st century. *Reviews of Geophysics*, 59, e2020RG000711. https://doi.org/10.1029/2020RG000711

Liu, J., Baskaran, L., Bowman, K., Schimel, D., Bloom, A. A., Parazoo, N. C., Oda, T., Carroll, D., Menemenlis, D., Joiner, J., Commane, R., Daube, B., Gatti, L. V., McKain, K., Miller, J., Stephens, B. B., Sweeney, C., and Wofsy, S.: Carbon Monitoring System

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Liu, J., Wennberg, P. O., Parazoo, N. C., Yin, Y., & Frankenberg, C. (2020). Observational constraints on the response of high-latitude northern forests to warming. *AGU Advances*, 1, e2020AV000228. https://doi.org/10.1029/2020AV000228

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Carroll, D., Menemenlis, D., et al. (including **J. Liu**), (2020). The ECCO-Darwin data-assimilative global ocean biogeochemistry model: Estimates of seasonal to multidecadal surface ocean pCO_2 and air-sea CO_2 flux. *Journal of Advances in Modeling Earth Systems*, 12, e2019MS001888. https://doi.org/10.1029/2019MS001888

Liao, E., Resplandy, L., Liu, J., & Bowman, K. W. (2020). Amplification of the ocean carbon sink during El Niños: Role of poleward Ekman transport and influence on atmospheric CO_2. *Global Biogeochemical Cycles*, 34, e2020GB006574. https://doi.org/10.1029/2020GB006574

Yin, Y. et al. (including **J. Liu**), 2020, Fire decline in dry tropical ecosystems enhances decadal land carbon sink. *Nat Commun* **11,** 1900 (2020). https://doi.org/10.1038/s41467-020-15852-2

Yi, Y., Kimball, J. S., Watts, J. D., Natali, S. M., Zona, D., **Liu, J.,** Ueyama, M., Kobayashi, H., Oechel, W., and Miller, C. E.: Investigating the sensitivity of soil heterotrophic respiration to recent snow cover changes in Alaska using a satellite-based permafrost carbon model, Biogeosciences, 17, 5861–5882, https://doi.org/10.5194/bg-17-5861-2020, 2020.

Byrne, B.*, **Liu, J.,** Bloom, A. A., Bowman, K. W., Butterfield, Z., Joiner, J., et al. (2020). Contrasting regional carbon cycle responses to seasonal climate anomalies across the east-west divide of temperate North America. *Global Biogeochemical Cycles*, 34, e2020GB006598. https://doi.org/10.1029/2020GB006598

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Butler, M. P., Lauvaux, T., Feng, S., **Liu, J.,** Bowman, K. W., & Davis, K. J. (2020). Atmospheric simulations of total column CO2 mole fractions from global to mesoscale within the carbon monitoring system flux inversion framework. *Atmosphere*, *11*(8), 787.

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Current Funding Support

- NASA OCO Science team, title: Revealing the mystery of African Carbon cycle. PI, 2021-2024
- NASA Carbon Cycle science program, title: Contrasting carbon-climate interactions from interannual to long-term carbon-climate feedbacks across tropical continents. PI, 2021-2024
- NASA CMS program, title: High-Resolution Carbon Monitoring System in East Africa: Unifying Top-Down Atmospheric Inversion and Bottom-Up Next-Generation Vegetation-Soil Models and Observations, **co-I, institutional PI, 2021-2024.**
- NASA CMS program, title: Preparing CMS flux for inventory applications, **co-I, institutional PI, 2021-2024.**
- NASA OCO Science Team, title: Revealing the mystery of African carbon cycle, **PI: 2021-2024.**
- NASA OCO Science Team, title: Diagnosing and attributing Arctic-Boreal carbon fluxes using in situ and satellite CO2 monitoring network. **co-I, institutional PI, 2021-2024.**
- NASA OCO Science Team, title: Investigating the impact of extreme climate events on terrestrial biosphere carbon flux interannual variability with a regional high-resolution L-4 surface CO2 product, **PI, 2018-2021**

- NASA OCO Science Team, title: Observing and validating carbon-climate feedbacks with OCO-2, **co-I, 2018-2021**\
- NASA OCO Science Team, title: Ocean Processes Controlling Carbon Fluxes during ENSO Constrained by OCO-2 and Oxygen Measurements**, co-I, 2018-2021**
- NASA MEASURES program, title: Records of Fused and Assimilated Satellite Carbon Dioxide Observations and Fluxes from Multiple Instruments, **co-I, 2018-2023**

Community Service

- Reviewer for Nature Plants, Scientific Report, Monthly Weather Review, Quarterly Journal of, Tellus, Climate Dynamics, Journal of Climate, Atmospheric Chemistry and Physics, and Geophysical Model Development
- Reviewer for NASA, NOAA and NSF proposals