Marc L. Fischer

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**Education**

B.S. 1981 - Physics, Massachusetts Institute of Technology

M.S. 1982 - Physics, University of Illinois at Urbana-Champaign

Ph.D. 1991 - Physics, University of California at Berkeley

Postdoctoral 1991-1998 – UC Berkeley, Terrestrial Biogeochemistry

**Service**

**Review of Proposals:** DOE – Office of Science, NSF-Atmospheric Chemistry, NOAA-Office of Global Programs

**Review of Manuscripts:** Journal Geophysical Research, Journal of Applied Meteorology, Ecological Applications, Environmental Science & Technology, Journal of Atmospheric Environment, Transactions on Geoscience and Remote Sensing, and Astrophysical Journal.

**Patents**

US 2015-0047416. MOBILE PLUME INTEGRATOR SYSTEM

A system for measuring a gas plume includes a vehicle with a mast comprising multiple inlet tubes connected to gas analyzers to measure real-time height-resolved gas concentrations (e.g., methane) together with anemometers to measure the wind velocity along the mast, allowing quantification of the mass flux of the gas across the plane of motion defined by the vehicles motion.

RECENT PUBLICATIONS

1. Fischer, M. L., N. Parazoo, K. Brophy, X. Cui, S. Jeong, J. Liu, R. Keeling, T. E. Taylor, K. Gurney, T. Oda and H. Graven (2017). Simulating Estimation of California Fossil Fuel and Biosphere Carbon Dioxide Exchanges Combining In-situ Tower and Satellite Column Observations. Journal of Geophysical Research: Atmospheres: n/a-n/a. DOI: 10.1002/2016JD025617.
2. Cui, Y. Y., J. Brioude, W. M. Angevine, J. Peischl, S. A. McKeen, S.-W. Kim, J. A. Neuman, D. K. Henze, N. Bousserez, M. L. Fischer, S. Jeong, H. A. Michelsen, R. P. Bambha, Z. Liu, G. W. Santoni, B. C. Daube, E. A. Kort, G. J. Frost, T. B. Ryerson, S. C. Wofsy and M. Trainer (2017). Top-down estimate of methane emissions in California using a mesoscale inverse modeling technique: The San Joaquin Valley. Journal of Geophysical Research: Atmospheres: 2016JD026398. DOI: 10.1002/2016JD026398.
3. Bagley, J. E., S. Jeong, X. Cui, S. Newman, J. Zhang, C. Priest, M. Campos-Pineda, A. E. Andrews, L. Bianco, M. Lloyd, N. Lareau, C. Clements and M. L. Fischer (2017). Assessment of an atmospheric transport model for annual inverse estimates of California greenhouse gas emissions. Journal of Geophysical Research: Atmospheres. DOI: 10.1002/2016JD025361.
4. Jeong, S., X. Cui, D. R. Blake, B. Miller, S. A. Montzka, A. Andrews, A. Guha, P. Martien, R. P. Bambha, B. LaFranchi, H. A. Michelsen, C. Clements, P. Glaize and M. L. Fischer (2016). Estimating methane emissions from biological and fossil-fuel sources in the San Francisco Bay Area. Geophysical Research Letters, 43,  DOI: 10.1002/2016GL071794.
5. Jeong, S., S. Newman, J. Zhang, A. E. Andrews, L. Bianco, J. Bagley, X. Cui, H. Graven, J. Kim, P. Salameh, B. W. LaFranchi, C. Priest, M. Campos-Pineda, E. Novakovskaia, C. D. Sloop, H. A. Michelsen, R. P. Bambha, R. F. Weiss, R. Keeling and M. L. Fischer (2016). Estimating methane emissions in California's urban and rural regions using multitower observations J. Geophys. Res. Atmos., 121, 13,031–13,049, doi:[10.1002/2016JD025404](http://dx.doi.org/10.1002/2016JD025404).
6. Maasakkers, J. D., D. J. Jacob, M. P. Sulprizio, A. J. Turner, M. Weitz, T. Wirth, C. Hight, M. DeFigueiredo, M. Desai, R. Schmeltz, L. Hockstad, A. A. Bloom, K. W. Bowman, S. Jeong and M. L. Fischer (2016). Gridded National Inventory of U.S. Methane Emissions. Environmental Science & Technology. DOI: 10.1021/acs.est.6b02878.
7. Johnson, M. S., X. Xi, S. Jeong, E. L. Yates, L. T. Iraci, T. Tanaka, M. Loewenstein, J. M. Tadić and M. L. Fischer (2016). Investigating seasonal methane emissions in Northern California using airborne measurements and inverse modeling. Journal of Geophysical Research: Atmospheres. DOI: 10.1002/2016JD025157.
8. Leifer I, Melton C, Frash J, Fischer ML, Cui X, Murray JJ and Green DS (2016) Fusion of Mobile In situ and Satellite Remote Sensing Observations of Chemical Release Emissions to Improve Disaster Response. Front. Environ. Sci. 4:59. doi: 10.3389/fenvs.2016.00059.
9. Feng, S., T. Lauvaux, S. Newman, P. Rao, R. Ahmadov, A. Deng, L. I. Díaz-Isaac, R. M. Duren, M. L. Fischer, C. Gerbig, K. R. Gurney, J. Huang, S. Jeong, Z. Li, C. E. Miller, D. O'Keeffe, R. Patarasuk, S. P. Sander, Y. Song, K. W. Wong and Y. L. Yung (2016). Los Angeles megacity: a high-resolution land–atmosphere modelling system for urban CO2 emissions. Atmos. Chem. Phys. **16**(14): 9019-9045. DOI: 10.5194/acp-16-9019-2016.
10. Lokupitiya, E., A. S. Denning, K. Schaefer, D. Ricciuto, R. Anderson, M. A. Arain, I. Baker, A. G. Barr, G. Chen, J. M. Chen, P. Ciais, D. R. Cook, M. Dietze, M. El Maayar, M. Fischer, R. Grant, D. Hollinger, C. Izaurralde, A. Jain, C. Kucharik, Z. Li, S. Liu, L. Li, R. Matamala, P. Peylin, D. Price, S. W. Running, A. Sahoo, M. Sprintsin, A. E. Suyker, H. Tian, C. Tonitto, M. Torn, H. Verbeeck, S. B. Verma and Y. Xue (2016). Carbon and energy fluxes in cropland ecosystems: a model-data comparison. Biogeochemistry **129**(1): 53-76. DOI: 10.1007/s10533-016-0219-3.
11. Newman, S., Xu, X., Gurney, K. R., Hsu, Y-K., Li, K.-F., Jiang, X., Keeling, R., Feng, S., O'Keefe, D., Patarasuk, R., Wong, K. W., Rao, P., Fischer, M. L., and Yung, Y. L.: Toward consistency between bottom-up CO2 emissions trends and top-down atmospheric measurements in the Los Angeles megacity, Atmos. Chem. Phys. Discuss., 15, 29591-29638, doi:10.5194/acpd-15-29591-2015, 2015.
12. Cui, Y. Y., J. Brioude, S. A. McKeen, W. M. Angevine, S.-W. Kim, G. J. Frost, R. Ahmadov, J. Peischl, N. Bousserez, Z. Liu, T. B. Ryerson, S. C. Wofsy, G. W. Santoni, E. A. Kort, M. L. Fischer and M. Trainer (2015). Top-down estimate of methane emissions in California using a mesoscale inverse modeling technique: 1. The South Coast Air Basin. Journal of Geophysical Research: Atmospheres: 2014JD023002. DOI: 10.1002/2014JD023002
13. Raz-Yaseef, N., D. P. Billesbach, M. L. Fischer, S. C. Biraud, S. A. Gunter, J. A. Bradford and M. S. Torn (2015). Vulnerability of crops and native grasses to summer drying in the US Southern Great Plains. Agriculture Ecosystems & Environment **213**: 209-218.
14. Newsom, R. K., L. K. Berg, W. J. Shaw and M. L. Fischer (2015). Turbine-scale wind field measurements using dual-Doppler lidar. Wind Energy **18**(2): 219-235.
15. Hu, L.; Montzka, S. A.; Miller, J. B.; Andrews, A. E.; Lehman, S. J.; Miller, B. R.; Thoning, K.; Sweeney, C.; Chen, H.; Godwin, D. S.; Masarie, K.; Bruhwiler, L.; Fischer, M. L.; Biraud, S. C.; Torn, M. S.; Mountain, M.; Nehrkorn, T.; Eluszkiewicz, J.; Miller, S.; Draxler, R. R.; Stein, A. F.; Hall, B. D.; Elkins, J. W.; Tans, P. P., U.S. emissions of HFC-134a derived for 2008–2012 from an extensive flask-air sampling network. (2015) *Journal of Geophysical Research: Atmospheres.* *120* (2), 2014JD022617. DOI: 10.1002/2014JD022617
16. Fairley, D. and M. L. Fischer (2015). "Top-Down Methane Emissions Estimates for the San Francisco Bay Area from 1990 to 2012." Atmospheric Environment. <http://dx.doi.org/10.1016/j.atmosenv.2015.01.065>