

DENNIS DAVID BALDOCCHI

Professor of Biometeorology
Department of Environmental Science, Policy and Management
& Berkeley Atmospheric Science Center
130 Mulford Hall
University of California, Berkeley
Berkeley, CA 94720
email: baldocchi@berkeley.edu

Researcher ID: A-1625-2009

Google scholar: <https://scholar.google.com/citations?user=dJ8MMFoAAAAJ&hl=en>

RESEARCH INTERESTS

Experimental and theoretical studies on the physical, biological and chemical control of trace gas exchange between vegetation, soil and the atmosphere. Lines of inquiry revolve around quantifying the fluxes of greenhouse gases (e.g. water vapor, carbon dioxide, methane) of ecosystems that receive excess (e.g. wetlands, rice) or deficient (e.g. oak savanna and annual grasslands) amounts of water. The ultimate goal of our research is to predict the fluxes of a suite of greenhouse gases everywhere, and all of the time.

EMPLOYMENT

University of California, Berkeley, Ecosystem Science Division, Department of Environmental Science, Policy and Management:

Acting Associate Professor of Biometeorology; July, 1998 through June, 2002.

Professor of Biometeorology, July, 2002 to present.

Chair, Ecosystem Science Division, July, 2004 to July 2007 present.

National Oceanic and Atmospheric Administration, Atmospheric Turbulence and Diffusion Division, PO Box 2456, Oak Ridge, TN, 37831:

Physical Scientist, Oct. 1986-June, 1999;

Biometeorologist (on contract with Oak Ridge Associated Universities) July, 1983-Oct, 1986; *ORAU*

Postdoctoral Fellow, Aug. 1982-July, 1983.

University of Nebraska, Center for Agricultural Meteorology and Climatology, Lincoln, NE: *Research Associate*. July, 1979 to July, 1982.

University of Nebraska, Agricultural Engineering Department, Agricultural Meteorology Section, Lincoln, NE: *Graduate Research Assistant*. July, 1977 to July, 1979.

OTHER DUTY STATIONS

Wageningen University, Environmental Sciences Group, Meteorology and Air Quality sub-division, Wageningen, Netherlands, WIMEK Fellow, Jan-Feb, 2015.

Centre d'Ecologie Fonctionnel et Evolutive, Centre National de la Recherche Scientifique, Montpellier, France. *Chercheur étranger*. Oct-December, 2007.

University of Innsbruck, Institute for Botany, Sternwartestrasse, 15, A-6020, Innsbruck, Austria: *Gastprofessor*, May 14-24, 2001.

Station Bioclimatologie, Institut Nationale de al Recherche Agronomique. Bordeaux France:
Chercheur etranger, Sept through December, 1996.

Universita degli Studi della Tuscia (Viterbo, Italy), Dipartimento di Scienze dell'Ambiente Forestale e delle sue Risorse: *RAISA Fellow*, Nov, 1992 through January, 1993

University of Stockholm (Stockholm, Sweden), Department of Meteorology:
Visiting Scientist, April to June, 1990.

EDUCATION

University of Nebraska, Lincoln	Ph.D. 1982 Bioenvironmental Engineering
University of Nebraska, Lincoln	M.S. 1979. Agricultural Engineering
University of California, Davis	B.S. 1977. Atmospheric Sciences.

AWARDS/HONORS/NAMED LECTURES

Awards:

Thompson Reuters Highly-Cited Researcher in Agricultural Sciences, 2014, 2015, 2016, '*in recognition of ranking among the top 1% of researchers for most cited documents, in their specific field*'
<http://highlycited.com/>

Thompson Reuters Highly-Cited Researcher in Environmental Science/Ecology, 2015

Faculty Award for Excellence in Postdoctoral Mentoring, University of California, Berkeley, 2011.

Award for Outstanding Achievement in Biometeorology, American Meteorological Society 2009, '*for extensive contributions in the area of trace gas and energy exchange between vegetation and the atmosphere, and leading efforts in the international Fluxnet community*'.

Fellow, American Geophysical Union, 2007. '*for contributions in biosphere-atmosphere exchange, unselfish service to a broad community and contributions to various studies that have resulted in productive collaborations with colleagues in fields outside his own.*'

Norbert Gerbier-MUMM International Award for 2004 conferred on B.E. Law, E. Falge, L. Gu, **D.D. Baldocchi**, P. Bakwin, P. Berbigier, K. Davis, A.J. Dolman, M. Falk, J.D. Fuentes, A. Goldstein, A. Granier, A. Grelle, D. Hollinger, I.A. Janssens, P. Jarvis, N.O. Jensen, G. Katul, Y. Mahli, G. Matteucci, T. Meyers, R. Monson, W. Munger, W. Oechel, R. Olson, K. Pilegaard, K.T. Paw U, H. Thorgeirsson, R. Valentini, S. Verma, T. Vesala, K. Wilson and S. Wofsy for the paper entitled "Environmental controls over carbon dioxide and water vapor exchange of terrestrial vegetation" published in *Agricultural and Forest Meteorology* 113; 97-120, 2002.

Graduate of Distinction, 2007, Liberty Union High School, Brentwood, CA.

Department of Commerce, Silver Medal, 1996.

Named or Distinguished Lectures:

Geography Distinguished Lecturer, *Physics Wins, Biology is How it's Done: An Exploration of Ecosystem-Atmosphere Interactions*, University of Hawaii, Manoa, April, 2015

Karlsruhe Institute of Technology (KIT), Environmental Lecture. Garmisch-Partenkirchen, July, 2014.

7th annual Gaylon Campbell Lecture in Environmental Soil and Water Science, Washington State University, Pullman, WA, February 16, 2010.

17th Keuhnast Lecture, University of Minnesota, St Paul. October 15, 2009.

Using Biophysical Models and Eddy Covariance Measurements to Ask (and Answer) Questions About Biosphere-Atmosphere Interactions. Earth Sciences Division Distinguished Seminar Series, Lawrence Berkeley National Laboratory, Sept 5, 2008.

Distinguished Ecologist Lecturer, Graduate Degree Program in Ecology, Colorado State University, 2001.

Fellowships

Fulbright Specialist Czech Republic, Czech Academy of Science, July, 2014

RAISA (Ricerche Avanzate per Innovazioni nel Sistema Agricolo) Research Fellow, Consiglio Nazionale delle Ricerche (CNR), Italy. Nov. 1992 through Jan. 1993.

Inter-University Scholar on 'Engaging with California government on climate change'. Woods Institute for the Environment. Stanford University.

Other

Editor's Citation for Excellence in Refereeing, *Journal of Geophysical Research*, American Geophysical Union, 1990.

Editor's Citation for Excellence in Refereeing, *Global Biogeochemical Cycles*, American Geophysical Union, 2005.

Memberships

Faculty 1000, Ecosystem Ecology
American Geophysical Union
American Meteorological Society
Interdisciplinary Committee, World Cultural Council

BOOK

Monson, RK and **Baldocchi, DD**. 2014. Terrestrial Biosphere-Atmosphere Fluxes. Cambridge University Press. ISBN 978-1-107-04065-6. 487 pp.

REFEREED PUBLICATIONS: (#current or former student; * current or former postdoc/research associate/technician), > 33,000 Citations, H-index: 99, Web of Science, all databases; google scholar, > 55,000 citations, H index: 117.

262. Helliker, Brent R., Song, Xin, Goulden, Michael L., Clark, Kenneth, Bolstad, Paul, Munger, J. William, Chen, Jiquan, Noormets, Asko, Hollinger, David, Wofsy, Steve, Martin, Timothy, **Baldocchi, Dennis**, Euskirchenn, Eugenie, Desai, Ankur, Burns, Sean P. 2018. Assessing the interplay between canopy energy balance and photosynthesis with cellulose $\delta^{18}O$: large-scale patterns and independent ground-truthing. *Oecologia*. doi: 10.1007/s00442-018-4198-z
261. **Hemes, KS, Chamberlain, SD, Eichelmann, E. Knox, SH. Baldocchi, DD.** A biogeochemical compromise: The high methane cost of sequestering carbon in restored wetlands. *Geophysical Research Letters* <https://doi.org/10.1029/2018GL077747>
260. Anderson, M.; Gao, F.; Knipper, K.; Hain, C.; Dulaney, W.; **Baldocchi, D.; Eichelmann, E.; Hemes, K.**; Yang, Y.; Medellin-Azuara, J.; Kustas, W. Field-Scale Assessment of Land and Water Use Change over the California Delta Using Remote Sensing. *Remote Sens.* **2018**, *10*, 889. [doi:10.3390/rs10060889](https://doi.org/10.3390/rs10060889)
259. **Hemes, K. S., Eichelmann, E., Chamberlain, S., Knox, S., Oikawa, P.Y., Sturtevant, C., Verfaillie, J, Szutu, D. Baldocchi, D.D.** 2018. "A unique combination of aerodynamic and surface properties contribute to surface cooling in restored wetlands of the Sacramento-San Joaquin Delta, California." *Journal of Geophysical Research: Biogeosciences* <https://agupubs.onlinelibrary.wiley.com/doi/epdf/10.1029/2018JG004494>.
258. Eichelmann, E., K. S. Hemes, S. H. Knox, P. Y. Oikawa, S. D. Chamberlain, C. Sturtevant, J. Verfaillie, and **D. D. Baldocchi**. 2018. The effect of land cover type and structure on evapotranspiration from agricultural and wetland sites in the Sacramento–San Joaquin River Delta, California. *Agricultural and Forest Meteorology* **256–257**:179-195. <https://doi.org/10.1016/j.agrformet.2018.03.007>
257. **Baldocchi, D.**, H. Chu*, and M. Reichstein. 2018. Inter-annual variability of net and gross ecosystem carbon fluxes: A review. *Agricultural and Forest Meteorology* **249**:520-533. <https://doi.org/10.1016/j.agrformet.2017.05.015>
257. Yu Guirui; Chen Zhi; Zhang Leiming; Peng Changhui; Chen Jingming; Piao Shilong; Zhang Yangjian; Niu Shuli; Wang Qiufeng; Luo Yiqi P. Ciais, and **D. Baldocchi** Dennis. 2017. Recognizing the Scientific Mission of Flux Tower Observation Networks Lay the Solid Scientific Data Foundation for Solving Ecological Issues Related to Global Change. *Journal of Resources and Ecology* **8**:115
256. Ma, S., J. L. Osuna, J. Verfaillie, and **D. D. Baldocchi**. 2017. Photosynthetic responses to temperature across leaf–canopy–ecosystem scales: a 15-year study in a Californian oak-grass savanna. *Photosynthesis research*:1-15. Doi:10.1007/s11120-017-0388-5
255. Chamberlain, S., Verfaillie, J, Eichelmann, E., Hemes, K. **Baldocchi, D.D.** Evaluation of density corrections to methane fluxes measured by open-path eddy covariance over contrasting landscapes, *Boundary-Layer Meteorology*. doi:10.1007/s10546-017-0275-9.
254. **Baldocchi, Dennis**; Chu, Housen; Reichstein, Markus. Inter-Annual Variability of Net and Gross Ecosystem Carbon Fluxes: A Review. *Agricultural and Forest Meteorology* <https://doi.org/10.1016/j.agrformet.2017.05.015>

253. Fisher, J. B., F. Melton, E. Middleton, C. Hain, M. Anderson, R. Allen, M. F. McCabe, S. Hook, **D. Baldocchi**, P. A. Townsend, A. Kilic, K. Tu, D. D. Miralles, J. Perret, J.-P. Lagouarde, D. Waliser, A. J. Purdy, A. French, D. Schimel, J. S. Famiglietti, G. Stephens, and E. F. Wood. 2017. The future of evapotranspiration: Global requirements for ecosystem functioning, carbon and climate feedbacks, agricultural management, and water resources. *Water Resources Research* 53:2618-2626. doi/10.1002/2016WR020175
252. Pastorello, G. Z., D. Papale, H. Chu, C. Trotta, D. A. Agarwal, E. Canfora, **D. D. Baldocchi**, and M. S. Torn (2017), A new data set to keep a sharper eye on land-air exchanges, *Eos*, 98, <https://doi.org/10.1029/2017EO071597>.
251. Liu, Y., M. J. Hill, X. Zhang, Z. Wang, A. D. Richardson, K. Hufkens, G. Filippa, **D. D. Baldocchi**, S. Ma, J. Verfaillie, and C. B. Schaaf. 2017. Using data from Landsat, MODIS, VIIRS and PhenoCams to monitor the phenology of California oak/grass savanna and open grassland across spatial scales. *Agricultural and Forest Meteorology* **237–238**:311-325.
250. Wharton, S., S. Ma, **D. D. Baldocchi**, M. Falk, J. F. Newman, J. L. Osuna, and K. Bible. 2017. Influence of regional nighttime atmospheric regimes on canopy turbulence and gradients at a closed and open forest in mountain-valley terrain. *Agricultural and Forest Meteorology* **237–238**:18-29. <http://dx.doi.org/10.1016/j.agrformet.2017.01.020>
249. Chu, H.* , **D. D. Baldocchi**, R. John, S. Wolf*, and M. Reichstein (2017), Fluxes All of the Time? A Primer on the Temporal Representativeness of FLUXNET, *J. Geophys. Res. Biogeosci.*, 122, doi:[10.1002/2016JG003576](https://doi.org/10.1002/2016JG003576).
248. Oikawa, P. Y.* , G. D. Jenerette, S. H. Knox#, C. Sturtevant*, J. Verfaillie*, I. Dronova, C. M. Poindexter, E. Eichelmann*, and **D. D. Baldocchi** (2017), Evaluation of a hierarchy of models reveals importance of substrate limitation for predicting carbon dioxide and methane exchange in restored wetlands, *J. Geophys. Res. Biogeosci.*, 122, doi:[10.1002/2016JG003438](https://doi.org/10.1002/2016JG003438).
247. Miner, G. L., Bauerle, W. L., and **Baldocchi, D. D.** (2017) Estimating the sensitivity of stomatal conductance to photosynthesis: A review. *Plant, Cell & Environment*, doi: [10.1111/pce.12871](https://doi.org/10.1111/pce.12871).
246. McNicol, G., Sturtevant, C. S.* , Knox, S. H#., Dronova, I., **Baldocchi, D. D.** and Silver, W. L. (2017), Effects of seasonality, transport pathway, and spatial structure on greenhouse gas fluxes in a restored wetland. *Glob Change Biol.* doi:10.1111/gcb.13580
245. Oikawa, P. Y.* , C. Sturtevant*, S. H. Knox#, J. Verfaillie*, Y. W. Huang, and **D. D. Baldocchi**. 2017. Revisiting the partitioning of net ecosystem exchange of CO₂ into photosynthesis and respiration with simultaneous flux measurements of ¹³CO₂ and CO₂, soil respiration and a biophysical model, CANVEG. *Agricultural and Forest Meteorology* **234–235**:149-163.
244. Ma, S.* , **D. Baldocchi**, S. Wolf*, and J. Verfaillie*. 2016. Slow ecosystem responses conditionally regulate annual carbon balance over 15 years in Californian oak-grass savanna. *Agricultural and Forest Meteorology* **228–229**:252-264.
243. Xin, F., X. Xiao, B. Zhao, A. Miyata, **D. Baldocchi**, S. Knox#, M. Kang, K.-m. Shim, S. Min, B. Chen, X. Li, J. Wang, J. Dong, and C. Biradar. 2017. Modeling gross primary production of paddy rice cropland through analyses of data from CO₂ eddy flux tower sites and MODIS images. *Remote Sensing of Environment* **190**:42-55.

242. **Baldocchi, D.**, Y. Ryu, and T. Keenan. 2016. Terrestrial Carbon Cycle Variability. F1000Research. <http://f1000research.com/articles/5-2371/v1> DOI: 10.12688/f1000research.8962.1
241. Wang, J., X. M. Xiao, P. Wagle, S. Y. Ma*, **D. Baldocchi**, A. Carrara, Y. Zhang, J. W. Dong, and Y. W. Qin. 2016. Canopy and climate controls of gross primary production of Mediterranean-type deciduous and evergreen oak savannas. *Agricultural and Forest Meteorology* **226**:132-147. <http://dx.doi.org/10.1016/j.agrformet.2016.05.020>
240. Wolf, S*, T. F. Keenan, J. B. Fisher, **D. D. Baldocchi**, A. R. Desai, A. D. Richardson, R. L. Scott, B. E. Law, M. E. Litvak, N. A. Brunsell, W. Peters, and I. T. van der Laan-Luijkx. 2016. Warm spring reduced carbon cycle impact of the 2012 US summer drought. *Proceedings of the National Academy of Sciences*. Doi: 10.1073/pnas.1519620113
239. Poindexter, C. M., **D. D. Baldocchi**, J. H. Matthes#, S. H. Knox#, and E. A. Variano. 2016. The contribution of an overlooked transport process to a wetland's methane emissions. *Geophysical Research Letters*, doi: 10.1002/2016gl068782
238. **Baldocchi, D.**, S. Knox#, I. Dronova, J. Verfaillie*, P. Oikawa*, C. Sturtevant*, J. H. Matthes#, and M. Detto*. 2016. The impact of expanding flooded land area on the annual evaporation of rice. *Agricultural and Forest Meteorology* **223**:181-193. <http://dx.doi.org/10.1016/j.agrformet.2016.04.001>
237. Knox, S# H., J. H. Matthes#, C. Sturtevant*, P. Y. Oikawa*, J. Verfaillie*, and **D. Baldocchi**. 2016. Biophysical controls on interannual variability in ecosystem-scale CO₂ and CH₄ exchange in a California rice paddy. *Journal of Geophysical Research-Biogeosciences* **121**:978-1001. Doi: 10.1002/2015jg003247
236. Anderson, F. E., B. Bergamaschi, C. Sturtevant*, S. Knox#, L. Hastings, L. Windham-Myers, M. Detto*, E. L. Hestir, J. Drexler, R. L. Miller, J. H. Matthes#, J. Verfaillie*, **D. Baldocchi**, R. L. Snyder, and R. Fujii. 2016. Variation of energy and carbon fluxes from a restored temperate freshwater wetland and implications for carbon market verification protocols. *Journal of Geophysical, Biogeoscience* DOI: 10.1002/2015JG003083
235. Pennypacker, S# and **D. Baldocchi**. 2015. Seeing the Fields and Forests: Application of Surface-Layer Theory and Flux-Tower Data to Calculating Vegetation Canopy Height. *Boundary-Layer Meteorology*:1-18. Doi: 10.1007/s10546-015-0090-0
234. Sturtevant, C., B. L. Ruddell, S. H. Knox, J. Verfaillie, J. H. Matthes, P. Y. Oikawa, and **D. Baldocchi**. 2015, Identifying scale-emergent, non-linear, asynchronous processes of wetland methane exchange, *J. Geophys. Res. Biogeosci.*, 120, doi:[10.1002/2015JG003054](https://doi.org/10.1002/2015JG003054).
233. Wagle, P., X. Xiao, R. L. Scott, T. E. Kolb, D. R. Cook, N. Brunsell, **D. D. Baldocchi**, J. Basara, R. Matamala, Y. Zhou, and R. Bajgain. 2015. Biophysical controls on carbon and water vapor fluxes across a grassland climatic gradient in the United States. *Agricultural and Forest Meteorology* **214–215**:293-305.
232. Matthes, J. H.#, S. H. Knox#, C. Sturtevant*, O. Sonnentag*, J. Verfaillie*, and **D. Baldocchi**. 2015. Predicting landscape-scale CO₂ flux at a pasture and rice paddy with long-term hyperspectral canopy reflectance measurements. *Biogeosciences* **12**:4577-4594.

231. **Baldocchi, D.**, C. Sturtevant*, and Fluxnet Contributors. 2015. Does day and night sampling reduce spurious correlation between canopy photosynthesis and ecosystem respiration? *Agricultural and Forest Meteorology* **207**:117-126.
230. Petrescu, A. M. R., A. Lohila, J.-P. Tuovinen, **D. D. Baldocchi**, A. R. Desai, N. T. Roulet, T. Vesala, A. J. Dolman, W. C. Oechel, B. Marcolla, T. Friborg, J. Rinne, J. H. Matthes, L. Merbold, A. Meijide, G. Kiely, M. Sottocornola, T. Sachs, D. Zona, A. Varlagin, D. Y. F. Lai, E. Veenendaal, F.-J. W. Parmentier, U. Skiba, M. Lund, A. Hensen, J. van Huissteden, L. B. Flanagan, N. J. Shurpali, T. Grünwald, E. R. Humphreys, M. Jackowicz-Korczyński, M. A. Aurela, T. Laurila, C. Grüning, C. A. R. Corradi, A. P. Schrier-Uijl, T. R. Christensen, M. P. Tamstorf, M. Mastepanov, P. J. Martikainen, S. B. Verma, C. Bernhofer, and A. Cescatti. 2015. The uncertain climate footprint of wetlands under human pressure. *Proceedings of the National Academy of Sciences*. Doi: 10.1073/pnas.1416267112
229. Osuna, J.L.#, **Baldocchi, D.D.**, Kobayashi, H.* and Dawson, T.E., 2015. Seasonal trends in photosynthesis and electron transport during the Mediterranean summer drought in leaves of deciduous oaks. *Tree Physiology*. doi 10.1093/treephys/tpv023.
228. Toomey, Michael, Friedl, M., Frohking, S., Hufkens, K., Klosterman, S., Sonnentag, O., **Baldocchi, D.D.**, Bernacchi, C.J., Bohrer, G., Brzostek, E., Burns, S.P., Coursolle, C., Hollinger, D.Y., Margolis, H.A., McCaughey, H., Monson, R.K., Munger, J.W., Pallardy, S., Phillips, R.P., Torn, M., Wharton, S., Zeri, M., Richardson, A.D.. 2015. Greenness indices from digital cameras predict the timing and seasonal dynamics of canopy-scale photosynthesis. *Ecological Applications*. **25**:99-115.
227. Knox, S. H.#, C. Sturtevant*, J. H. Matthes#, L. Koteen*, J. Verfaillie*, and **D. Baldocchi**. 2014. Agricultural peatland restoration: effects of land-use change on greenhouse gas (CO₂ and CH₄) fluxes in the Sacramento-San Joaquin Delta. *Global Change Biology*:doi 10.1111/gcb.12745
226. Xiao, J., S. V. Ollinger, S. Frohking, G. C. Hurtt, D. Y. Hollinger, K. J. Davis, Y. Pan, X. Zhang, F. Deng, J. Chen, **D. D. Baldocchi**, B. E. Law, M. A. Arain, A. R. Desai, A. D. Richardson, G. Sun, B. Amiro, H. Margolis, L. Gu, R. L. Scott, P. D. Blanken, and A. E. Suyker. 2014. Data-driven diagnostics of terrestrial carbon dynamics over North America. *Agricultural and Forest Meteorology* **197**:142-157.
225. Matthes Hatala, J.#, Sturtevant, C.*, O'Connell, J., Byrd, K., Verfaillie, J.*, Knox, S.#, **Baldocchi, D.**, 2014. Parsing variability in CH₄ fluxes at a spatially heterogeneous wetland: Integrating multiple eddy covariance towers with high-resolution flux footprint analysis *Journal of Geophysical Research – Biogeosciences* 2014JG002642R.
224. Koteen, L. E.*, N. Raz-Yaseef*, and **D. D. Baldocchi**. 2014., Spatial heterogeneity of fine root biomass and soil carbon in a California oak savanna illuminates plant functional strategy across periods of high and low resource supply, *Ecohydrology*, doi: 10.1002/eco.1508
223. **Baldocchi, D.D.** 2014. Measuring Fluxes of Trace Gases and Energy between Ecosystems 1 and the Atmosphere—the State and Future of the Eddy Covariance Method. *Global Change Biology*. Doi: 10.1111/gcb.12649
222. **Baldocchi, D.D.** and Waller, E#. 2014. Winter Fog is Decreasing in the Fruit Growing Region of the Central Valley of California. *Geophysical Research Letters*, 2014GL060018.

221. Vila-Guerau de Arellano, Jordi, Ouwersloot, H. G., **Baldocchi, D.D.**, Jacobs, C. 2014. Shallow cumulus rooted in photosynthesis. *Geophysical Research Letters*. Doi:10.1002/2014GL059279
220. Reichstein, M., M. Bahn, M. D. Mahecha, J. Kattge, and **D. D. Baldocchi**. 2014. Linking plant and ecosystem functional biogeography. *Proceedings of the National Academy of Sciences* **111**:13697-13702.
219. Béland, M.* , **D. D. Baldocchi**, J.-L. Widlowski, R. A. Fournier, and M. M. Verstraete. 2014. On seeing the wood from the leaves and the role of voxel size in determining leaf area distribution of forests with terrestrial LiDAR, *Agricultural and Forest Meteorology*, **184**, 82-97.
218. **Baldocchi, D.D.** and Ma, S*. 2013. How Will Land Use Affect Air Temperature in the Surface Boundary Layer?: Lessons Learned from a Comparative Study on the Energy Balance of an Oak Savanna and an Annual Grassland in California, USA. *Tellus, B*, **65**, 19994, <http://dx.doi.org/10.3402/tellusb.v65i0.19994>.
217. Vargas, R.* , Sonnentag, O.* , Abramowitz, G., Carrara, A., Chen, J., Ciais, P., Correia, A., Keenan, T., Kobayashi, H.* , Ourcival, J.-M., Papale, D., Pearson, D., Pereira, J., Piao, S., Rambal, S., **Baldocchi, D.**, 2013. Drought Influences the Accuracy of Simulated Ecosystem Fluxes: A Model-Data Meta-analysis for Mediterranean Oak Woodlands. *Ecosystems*, 1-16.
216. Raz-Yaseef, N.* , Koteen, L.* , Verfaillie, J.* , **Baldocchi, D.** 2013. Root system structure of a water limited oak savanna estimated with a ground penetrating radar. *Journal of Geophysical Research, Biogeosciences*. DOI: 10.1029/2012JG002160
215. Kobayashi, H*., Ryu, Y#., **Baldocchi, D.D.**, Welles, J.M., Norman, J.M., 2013. On the correct estimation of gap fraction: How to remove scattered radiation in gap fraction measurements? *Agricultural and Forest Meteorology* 174–175, 170-183.
214. Koteen, L.* and **Baldocchi, D.D.** 2013. A randomization method for efficiently and accurately processing fine roots, and separating them from debris, in the laboratory. *Plant and Soil*. **363**:383–398.
213. Peichl, M, Sonnentag, O.* , Wohlfahrt, G., Flanagan, L.B., **Baldocchi, D.D.**, Kiely, G., Galvagno, M., Gianelle, D., Marcolla, B., Pio, C., Migliavacca, M., Jones, M.B. Saunders, M. 2013. Convergence of potential net ecosystem production among contrasting C3 grassland. *Ecology Letters*. doi: 10.1111/ele.12075.
212. Chen, X.#, Miller, G.R.#, Rubin, Y., **Baldocchi, D.D.**, 2012. A statistical method for estimating wood thermal diffusivity and probe geometry using in situ heat response curves from sap flow measurements. *Tree Physiol*. doi 10.1093/treephys/tps100
211. Ryu, Y.#, Verfaillie, J.* , Macfarlane, C., Kobayashi, H., Sonnentag, O.* , Vargas, R.* , Ma, S.* , & **Baldocchi, D.D.** (2012). Continuous observation of tree leaf area index at ecosystem scale using upward-pointing digital cameras. *Remote Sensing of Environment*, **126**, 116-125
210. Schwalm, C.R., Williams, C.A., Schaefer, K., **Baldocchi, D.**, Black, T.A., Goldstein, A.H., Law, B.E., Oechel, W.C., Paw U, K.T., Scott, R.L., 2012. Reduction in carbon uptake during turn of the century drought in western North America. *Nature Geoscience* **5**, 551-556.

209. Yan, H., Wang, S.Q., Billesbach, D., Oechel, W., Zhang, J.H., Meyers, T., Martin, T.A., Matamala, R., **Baldocchi, D.**, Bohrer, G., Dragoni, D., Scott, R., 2012. Global estimation of evapotranspiration using a leaf area index-based surface energy and water balance model. *Remote Sensing of Environment* 124, 581-595.
208. Williams, C. A., M. Reichstein, N. Buchmann, **D. Baldocchi**, C. Beer, C. Schwalm, G. Wohlfahrt, N. Hasler, C. Bernhofer, T. Foken, D. Papale, S. Schymanski, and K. Schaefer. 2012. Climate and vegetation controls on the surface water balance: Synthesis of evapotranspiration measured across a global network of flux towers. *Water Resources Research* 48:W06523.
207. **Baldocchi, D.** Reichstein, M, Papale, D, Koteen, L*,. Vargas, R.* Agarwal, D., Cook, R. 2012. Role of Flux Networks in Biogeosciences. *EOS*. 93,217-218.
206. Hatala, J. A.#, M. Detto*, and **D. D. Baldocchi** (2012), Gross ecosystem photosynthesis causes a diurnal pattern in methane emission from rice, *Geophysical Research Letters.*, 39(6), L06409, doi:10.1029/2012GL051303.
205. Detto, M.*, Molini, A., Katul, G., Stoy, P., Palmroth, S. and **Baldocchi, D.** 2012. Causality and Persistence in Ecological Systems: A Non-Parametric Spectral Granger Causality Approach. *American Naturalist*. 179(4), 524-535
204. Hatala, J.A.#, Detto, M.*, Sonnentag. O*., Verfaillie, J., Deverel, S. **Baldocchi, D.D.** 2012. Greenhouse gas (CO₂, CH₄, H₂O) fluxes from drained and flooded agricultural peatlands in the Sacramento-San Joaquin Delta. *Agricultural Ecosystems and Environment*. 150:1-18
203. **Baldocchi, D.**, Matteo Detto*; Oliver Sonnentag*, Joe Verfaillie*, Yit Teh, Whendee Silver, Maggi Kelly. 2012. The Trials and Tribulations of Measuring Methane Fluxes and Concentrations over a Peatland Pasture in the Sacramento-San Joaquin River Delta of California. *Agricultural and Forest Meteorology*. 153:177-187.
202. Ma, S.*, **Baldocchi, D.D.**, Hatala, J.#, Detto, M.* and Curiel-Yuste, J.* 2012. Are rain-induced ecosystem respiration pulses enhanced by legacies of antecedent photodegradation in semi-arid environments? *Agricultural and Forest Meteorology*. 154-155:203-213.
201. Ryu, Y.#, **Baldocchi, D.D.**, Kobayashi, H.* , van Ingen, C., Li, J., Black, T.A., Beringer, J., van Gorsel, E., Knohl, A., Law, B.E., Richardson, A.D., Rouspard, O.. 2011. Integration of MODIS land and atmosphere products with a coupled-process model to estimate gross primary productivity and evapotranspiration from 1 km to global scales. *Global Biogeochemical Cycles*. 25:GB4017
200. Grant, R. **Baldocchi, D.D.** and Ma, S.# 2011. Ecological Controls on Net Ecosystem Productivity of a Seasonally Dry Annual Grassland under Current and Future Climates: Modelling with Ecosys. *Agricultural and Forest Meteorology*. 152:189-200
199. Koteen, L.#, **Baldocchi, D.D.**, Harte, J. 2011. Invasion of non-native grasses causes a drop in soil carbon storage in California grasslands, *Environmental Research Letters*. 6 044001 doi:10.1088/1748-9326/6/4/044001
198. Kobayashi, H.* ,**Baldocchi, D.D.**, Ryu, Y.#, Chen, Q.#, Ma, S*, Osuna, J.#, Ustin, S. 2011. Modeling Energy and Carbon Fluxes in a Heterogeneous Oak Woodland: A Three-Dimensional Approach. *Agricultural and Forest Meteorology*. 152:83-100.

197. Ryu, Y.#, **Baldocchi, D.**, Black, T.A., Detto, M.*, Law, B.E., Leuning, R., Miyata, A., Reichstein, M., Vargas, R., Ammann, C., Beringer, J., Flanagan, L.B., Gu, L., Hutley, L., Kim, J., Harry McCaughey; Eddy Moors; Rambal, S., Vesala, T., Richardson, A.D. 2011. On the temporal upscaling of evapotranspiration from instantaneous remote sensing measurements to 8-day mean daily-sums. *Agricultural and Forest Meteorology*. **152**:212-222.
196. Vargas R. *, **Baldocchi D.D.**, Bahn M., Hanson P.J., Hosman K.P., Kulmala L., Pumpanen J. & Yang B. 2011. On the multi-temporal correlation between photosynthesis and soil CO₂ efflux: reconciling lags and observations. *New Phytologist*. 191, 1006-1017.
195. Sonnentag O.*, Detto M.*, Vargas R.*, Ryu Y.#, Runkle B.R.K.#, Kelly M. & **Baldocchi D.D.** (2011) Tracking the structural and functional development of a perennial pepperweed (*Lepidium latifolium* L.) infestation using a multi-year archive of webcam imagery and eddy covariance measurements. *Agricultural and Forest Meteorology*, **151**, 916-926.
194. Kattge, J., S. Diaz, S. Lavorel, C. Prentice, P. Leadley, G. Bonisch, E. Garnier, M. Westoby, P. B. Reich, I. J. Wright, J. H. C. Cornelissen, C. Violle, S. P. Harrison, P. M. van Bodegom, M. Reichstein, B. J. Enquist, N. A. Soudzilovskaia, D. D. Ackerly, M. An, O. Atkin, M. Bahn, T. R. Baker, **D. Baldocchi**, R. Bekker, C. C. Blanco, B. Blonder, W. J. Bond, R. Bradstock, D. E. Bunker, F. Casanoves, J. Cavender-Bares, J. Q. Chambers, F. S. Chapin, J. Chave, D. Coomes, W. K. Cornwell, J. M. Craine, B. H. Dobrin, L. Duarte, W. Durka, J. Elser, G. Esser, M. Estiarte, W. F. Fagan, J. Fang, F. Fernandez-Mendez, A. Fidelis, B. Finegan, O. Flores, H. Ford, D. Frank, G. T. Freschet, N. M. Fyllas, R. V. Gallagher, W. A. Green, A. G. Gutierrez, T. Hickler, S. I. Higgins, J. G. Hodgson, A. Jalili, S. Jansen, C. A. Joly, A. J. Kerkhoff, D. Kirkup, K. Kitajima, M. Kleyer, S. Klotz, J. M. H. Knops, K. Kramer, I. Kuhn, H. Kurokawa, D. Laughlin, T. D. Lee, M. Leishman, F. Lens, T. Lenz, S. L. Lewis, J. Lloyd, J. Llusia, F. Louault, S. Ma*, M. D. Mahecha, P. Manning, T. Massad, B. E. Medlyn, J. Messier, A. T. Moles, S. C. Muller, K. Nadrowski, S. Naeem, U. Niinemets, S. Nollert, A. Nuske, R. Ogaya, J. Oleksyn, V. G. Onipchenko, Y. Onoda, J. Ordonez, G. Overbeck, W. A. Ozinga, S. Patino, S. Paula, J. G. Pausas, J. Penuelas, O. L. Phillips, V. Pillar, H. Poorter, L. Poorter, P. Poschold, A. Prinzing, R. Proulx, A. Rammig, S. Reinsch, B. Reu, L. Sack, B. Salgado-Negre, J. Sardans, S. Shiodera, B. Shipley, A. Siefert, E. Sosinski, J. F. Soussana, E. Swaine, N. Swenson, K. Thompson, P. Thornton, M. Waldram, E. Weiher, M. White, S. White, S. J. Wright, B. Yguel, S. Zaehle, A. E. Zanne, C. Wirth. 2011. TRY - a global database of plant traits. *Global Change Biology* **17**:2905-2935.
193. Detto, M.*, **Baldocchi, D.D.**, Anderson, F., Verfaillie, J., Xu, L. 2011. Comparing laser-based open- and closed-path gas analyzers to measure methane fluxes using the eddy covariance method. *Agricultural and Forest Meteorology*. 151, 1312-1324.
192. Anderson RG, Canadell JG, Randerson JT, Jackson RB, Hungate BA, **Baldocchi DD**, Ban-Weiss GA, Bonan GB, Caldeira K, Cao L, Diffenbaugh NS, Gurney KR, Kueppers LM, Law BE, Luysaert S, O'Halloran TL. 2011. Biophysical considerations in forestry for climate protection. *Frontiers in Ecology and the Environment*. 9, 172-182.
191. Teh Y.A., Silver W.L., Sonnentag O.*, Detto M.*, Kelly M. & **Baldocchi D.D.** (2011) Large Greenhouse Gas Emissions from a Temperate Peatland Pasture. *Ecosystems*. **14**, 311-325.

190. Ma, S.* **Baldocchi, D.D.**, Mambelli, S. Dawson, T., Xu, L.* 2011. Towards understanding mechanisms behind seasonal and interannual variability in ecosystem CO₂ exchange with a link to plant leaf traits in an oak-grass savanna. *Functional Ecology*. 25, 258-270.
189. Sonnentag, O*, Detto M*, Runkle BRK#, Teh YA, Silver WL, Kelly M, **Baldocchi DD**. 2011. Carbon dioxide exchange of a pepperweed (*Lepidium latifolium* L.) infestation: how do flowering and mowing affect canopy photosynthesis and autotrophic respiration? *Journal of Geophysical Research, Biogeosciences*. 116(G1): G01021
188. Vargas, R*., Carbone, M.S., Reichstein, M. and **Baldocchi, D.D.**, 2011. Frontiers and challenges in soil respiration research: from measurements to model-data integration. *Biogeochemistry*, 102: 1-13.
187. Xiao, J., Q. Zhuang, B.E. Law, **D.D. Baldocchi**, J. Chen, A.D. Richardson, J.M. Melillo, K.J. Davis, D.Y. Hollinger, S. Wharton, R. Oren, A. Noormets, M.L. Fischer, S.B. Verma, D.R. Cook, G. Sun, S. McNulty, S.C. Wofsy, P.V. Bolstad, S.P. Burns, P.S. Curtis, B.G. Drake, M. Falk, D.R. Foster, L. Gu, J.L. Hadley, G.G. Katul, M. Litvak, S. Ma, T.A. Martin, R. Matamala, T.P. Meyers, R.K. Monson, J.W. Munger, W.C. Oechel, U.K.T. Paw, H.P. Schmid, R.L. Scott, G. Starr, A.E. Suyker, and M.S. Torn. 2011. Assessing net ecosystem carbon exchange of U.S. terrestrial ecosystems by integrating eddy covariance flux measurements and satellite observations, *Agricultural and Forest Meteorology*, 151: 60-69.
186. Ryu, Y.#, **Baldocchi, D.**, Ma, S.*, Falk, M.*, Verfaillie, J. 2010. A novel spectral sensor built with light emitting diodes (LEDs) to monitor ecosystem metabolism, structure and function. *Agricultural and Forest Meteorology*. 150: 1597-1606
185. Miller, G.R.#, Chen, X.#, Rubin, Y, Ma, S.* **Baldocchi, D.D.** 2010. Groundwater uptake by woody vegetation in a semi-arid oak savanna. *Water Resources Research*. doi:10.1029/2009WR008902.
184. Rutledge, S., Campbell, D., **Baldocchi, D.**, Schipper, L. Photodegradation leads to increased CO₂ losses from terrestrial organic matter. *Global Change Biology*. 16, 3065-3074.
183. Detto, M.* **Baldocchi, D.D.**, Katul, G.G. 2010. Scaling properties of biologically active scalar concentration fluctuations in the surface boundary layer over a managed peatland *Boundary Layer Meteorology*. 136:407-430
182. Beer, Ch., Reichstein, M., Tomelleri, E. Ciais, P., Jung, M., Carvalhais, N. Rodenbeck, C., Arain, A., **Baldocchi, D.**, Bonan, G.B., Bondeau, A., Cescatti, A., Lasslop, G., Lindroth, A., Lomas, M. Luyssaert, S., Margolis, H., Oleson, K.W., Rouspard, O., Veenendaal, E., Viovy, N., Williams, C., Woodward, F.I., Dario Papale, D. Terrestrial Gross Carbon Dioxide Uptake: Global Distribution and Co-variation with Climate. *Science*. 329:834-838.
181. Vargas, R.* **Dennis Baldocchi**, Michael Allen, Michael Bahn, T. Black, Scott Collins, Jorge Curiel Yuste*, Takashi Hirano, Rachhpal Jassal, Jukka Pumpanen, and Jianwu Tang*. 2010. Looking deeper into the soil: biophysical controls and seasonal lags of soil CO₂ production and efflux across multiple vegetation types. *Ecological Applications*. 20: 1569-1582.
180. **Baldocchi, D.D.**, Ma, S.*, Rambal, S., Misson, L. Ourcival, J-M, Limosin, J-M, Perieria, J.S., Papale, D. 2010. On the Differential Advantages of Evergreenness and Deciduousness in Mediterranean Oak Woodlands. *Ecological Applications*. 20: 1583-1597.

179. Vargas, R.* , Detto, M.* , **Baldocchi, D.**, Allen, M. 2010. Multiscale analysis of temporal variability of soil CO₂ production as influenced by weather and vegetation. *Global Change Biology*.16: 1589-1605
178. Curiel-Yuste, J*., **Baldocchi, D.D.**, Ma, S*. 2010. Acclimation to temperature of microbial-mediated soil organic matter decomposition. *Biogeochemistry*. 98: 127-138
177. Rhew, R.C., Chen, C., Teh, Y.A., **Baldocchi, D.** 2010. Gross fluxes of methyl chloride and methyl bromide in a California oak-savanna woodland. *Atmospheric Environment*. 44: 2054-2061.
176. Vargas, R.,* **Baldocchi, D.D.**, Querejeta, J.I.,Curtis, P.S., Hasselquist, N.J., Janssens, I.A, Allen, M.F., Montagnani, L. 2010. Ecosystem CO₂ fluxes of arbuscular and ectomycorrhizal dominated vegetation types are differentially influenced by precipitation and temperature. *New Phytologist*, 185:226-236.
175. Ryu Y,# Nilson T, Kobayashi H*, Sonnentag O*, Law BE, **Baldocchi DD.** 2010. On the correct estimation of effective leaf area index: Does it reveal information on clumping effects? *Agricultural and Forest Meteorology*. 150:463-472
174. Ryu Y#, Sonnentag O*, Nilson T, Vargas R*, Kobayashi H*, Wenk R, **Baldocchi DD.** 2010. How to quantify tree leaf area index in an open savanna ecosystem: A multi-instrument and multi-model approach. *Agricultural and Forest Meteorology*.150:63-76
173. Xiao JF, Zhuang QL, Law BE, Chen JQ, **Baldocchi DD**, Cook DR, Oren R, Richardson AD, Wharton S, Ma SY, Martini TA, Verma SB, Suyker AE, Scott RL, Monson RK, Litvak M, Hollinger DY, Sun G, Davis KJ, Bolstad PV, Burns SP, Curtis PS, Drake BG, Falk M, Fischer ML, Foster DR, Gu LH, Hadley JL, Katul GG, Roser Y, McNulty S, Meyers TP, Munger JW, Noormets A, Oechel WC, Paw KT, Schmid HP, Starr G, Torn MS, Wofsy SC A continuous measure of gross primary production for the conterminous United States derived from MODIS and AmeriFlux data. 2010. *Remote Sensing of Environment*. 114:576-591.
172. Lasslop G, Reichstein M, Detto M, Richardson AD, **Baldocchi DD.** 2010. Comment on Vickers et al.: Self-correlation between assimilation and respiration resulting from flux partitioning of eddy-covariance CO₂ fluxes. *Agricultural and Forest Meteorology* .150:312-314.
171. Hollinger, D.Y. , S.V. Ollinger, A.D. Richardson, T.P. Meyers, D.B. Dail, M.E. Martin, N.A. Scott, T.J. Arkebauer, **D.D. Baldocchi**, K. Clark, P.S. Curtis, K. Davis, A. Desai, D. Dragoni, M.L. Goulden, L. Gu, G.G. Katul, S. Pallardy, K.T. Paw U, H. Schmid, P.C. Stoy, A.E. Suyker, and S.B. Verma. 2010. Albedo estimates for land surface models and support for a new paradigm based on foliage nitrogen concentration. *Global Change Biology*. 16: 696-710.
170. Yuan, W, Luo, Y, Richardson, A.D., Oren, R., Luysaert, S., Janssens, I.A., Ceuleman, R., Zhou, X., Grunwald, T., Aubinet, M., Bernhofer, Ch., **Baldocchi, D.D.**, Chen, J., Dunn, A.L., Deforest, J., Dragoni, D., Goldstein, A.H., Moores, E., Munger, J.W., Monson, R.K., Suyker, A.E., Starr, G., Scott, R.L., Tenhunen, J., Verma, S.B., Vesala, T., Wofsy, S.C. 2009. Latitudinal patterns of magnitude and interannual variability in net ecosystem exchange regulated by biological and environmental variables. *Global Change Biology*. 15:2905- 2920
169. Stoy, P. C., A. D. Richardson, **D. D. Baldocchi**, G. G. Katul, J. Stanovick, M. D. Mahecha, M. Reichstein, M. Detto*, B. E. Law, G. Wohlfahrt, N. Arriga, J. Campos, J. H. McCaughey, L. Montagnani, K. T. Paw U, S. Sevanto, and M. Williams. 2009. Biosphere-atmosphere exchange

of CO₂ in relation to climate: a cross-biome analysis across multiple time scales. *Biogeosciences* 11 - BG 6 (10):2297-2312.

168. White, M.A., K. M. de Beurs, K. Didan, D.W. Inouye, A.D. Richardson, O. P. Jensen, J.O'Keefe, G.Zhang, R.R. Nemani, W.J.D. van Leeuwen, J.F. Brown, A. de Wit, M.Schaepman Xioamao Lin, M. Dettinger, A.S. Bailey, J. Kimball, M. D. Schwartz, **D.D. Baldocchi**, J.T. Lee, W.K. Lauenroth. 2009. Intercomparison, interpretation, and assessment of spring phenology in North America estimated from remote sensing for 1982 to 2006. *Global Change Biology*. 15, 2335–2359. DOI: 10.1111/j.1365-2486.2009.01910.x.
167. Beer, C., Ciais, P., Reichstein, M., **Baldocchi, D.**, Law, B. Papale, D., Soussana, J-F., Amman, C., Buchmann, N., Frank, D., Gianelle, D., Janssens, I.A., Knohl, A., Kostner, B., Moors, E., Roupard, O., Verbeeck, H., Vesala, T., Williams, C.A., Wohlfahrt, G. 2009. Temporal and between-site variability of inherent water-use efficiency on an ecosystem scale. *Global Biogeochemical Cycles*. GB2018, doi:10.1029/2008GB003233.
166. Jackson, RB, JT Randerson, JG Canadell, RG Anderson, R Avissar, **DD Baldocchi**, GB Bonan, K Caldeira, NS Diffenbaugh, CB Field, BA Hungate, EG Jobbágy, LM Kueppers, MD Noesetto, DE Pataki. 2008. Protecting climate with forests. *Environmental Research Letters*, 4, doi 10.1088/1748-9326/3/4/044006.
165. Xiao, J., Q. Zhuang, **D.D. Baldocchi**, B.E. Law, A.D. Richardson, J. Chen, R. Oren, G. Starr, A. Noormets, S. Ma, S.B. Verma, S. Wharton, S.C. Wofsy, P.V. Bolstad, S.P. Burns, D.R. Cook, P.S. Curtis, B.G. Drake, M. Falk, M.L. Fischer, D.R. Foster, L. Gu, J.L. Hadley, D.Y. Hollinger, G.G. Katul, M. Litvak, T.A. Martin, R. Matamala, S. McNulty, T.P. Meyers, R.K. Monson, J.W. Munger, W.C. Oechel, K.T. Paw U, H.P. Schmid, R.L. Scott, G. Sun, A.E. Suyker and M.S. Torn. 2008. Estimation of net ecosystem carbon exchange for the conterminous United States by combining MODIS and AmeriFlux data. *Agricultural and Forest Meteorology*. 148:1827-1847.
164. Prabha TV, Leclerc MY, **Baldocchi D.** 2008. Comparison of In-Canopy Flux Footprints between Large-Eddy Simulation and the Lagrangian Simulation. *J. Appl. Meteor. Climatol.*, **47**, 2115–2128.
163. Chen, X.#, Y. Rubin, S. Ma, and **D. Baldocchi.** 2008, Observations and stochastic modeling of soil moisture control on evapotranspiration in a Californian oak savanna, *Water Resources Research.*, 44, W08409, doi:10.1029/2007WR006646.
162. Chen, Q.#, **Baldocchi, D.**, Gong, P. and Dawson, T., 2008. Modeling radiation and photosynthesis of a heterogeneous savanna woodland landscape with a hierarchy of model complexities. *Agricultural and Forest Meteorology*, 148: 1005-1020
161. Castellví, F., Snyder, R.L. and **Baldocchi, D.D.**, 2008. Surface energy-balance closure over rangeland grass using the eddy covariance method and surface renewal analysis. *Agricultural and Forest Meteorology*, 148(6-7): 1147-1160.
160. Knohl, A., **Baldocchi, D.D.** 2008. Effects of diffuse radiation on canopy gas exchange processes in forest ecosystems.. *Journal of Geophysical Research, Biogeosciences*. 113: G02023, doi:10.1029/2007JG000663

159. Ryu, Y. #, **Baldocchi, D.D.**, Ma, S., and Hehn, T. 2008. Interannual variability of evapotranspiration and energy exchange over an annual grassland in California. *Journal of Geophysical Research, Atmospheres*. 113, D09104, doi:10.1029/2007JD009263
158. Sims, D. A., Rahman, A.F., Cordova, V.D., El-Masri, B.Z., **Baldocchi, D.D.**, Bolstad, P.V, Flanagan, L.D., Goldstein, A.H., Hollinger, D.Y., Misson, L., Monson, R.K., Oechel, W.C., Schmid, H.P., Wofsy, S.C., Xu, L. 2008. A new model of gross primary productivity for North American ecosystems based solely on the enhanced vegetation index and land surface temperature from MODIS. *Remote Sensing of the Environment*. 112: 1633-1646
157. Fisher, J#, Tu, K. **Baldocchi, D.D.** 2008 Global estimates of the land-atmosphere water flux: a fully-remote sensing driven, flux site-validated ecophysiological model of evapotranspiration. *Remote Sensing of the Environment*. 112, 901-919.
156. **Baldocchi, D.D.**, Wong, S.# 2008. Accumulated winter chill is decreasing in the fruit growing regions of California. *Climatic Change*. 87, S153-S166.
155. **Baldocchi, D.D.** 2008. 'Breathing' of the Terrestrial Biosphere: Lessons Learned from a Global Network of Carbon Dioxide Flux Measurement Systems. *Australian Journal of Botany*. 56, 1-26.
154. Chen, Q#, Gong, P, **Baldocchi, D.D.** and Y.Q. Tian. 2007. Estimating Basal Area and Stem Volume for Individual Trees from LIDAR data. *Photogrammetric Engineering & Remote Sensing*. 73: 1355-1365.
153. Curiel Yuste J.*, **Baldocchi DD**, Misson L. *, Wong S.#, Gershenson A, Goldstein A. 2007. Microbial Soil Respiration and its dependency on Carbon Inputs, Soil Temperature, Moisture. *Global Change Biology*. 13, 2018-2035
152. **Baldocchi D.D.**, Liukang Xu*. 2007. Evaporation from Mediterranean Oak Woodlands—a Balance between the Supply and Demand for Water by Plants and the Atmosphere. *Advances in Water Research*. 30, 2113-2122.
151. Ma, S.* , **Baldocchi, DD.**, Xu. L* , Hehn, T. 2007. Interannual variability in carbon exchange of an oak/grass savanna and an annual grassland in California. *Agricultural and Forest Meteorology*. 147, 157-171
150. Wang, Y.P., **Baldocchi, D.**, Leuning, R., Falge, E. and Vesala, T. 2007. Estimating parameters in a land surface model by applying nonlinear inversion to eddy covariance flux measurements from eight FLUXNET sites. *Global Change Biology*. 13, 652-670.
149. Sundareshwar, P.V., Murtugudde R., Srinivasan G., Singh S., Ramesh K.J., Agarwal D. , **Baldocchi D.**, Baru C.K., Baruah K.K., Chowdhury G.R., V Dadhwal.K. , Dutt C.B.S., Fuentes J., Gupta P.K., Hargrove W.W., Howard M., Jha C.S. , Lal S. , Michener W.K., Mitra A.P., Morris J.T., Myneni R.R., Naja M., Nemani R., Raha S., Ramesh R., Santhana Vanan S.K. , Sharma M., Subramaniam A. , Sukumar R. , Twilley R.R., Verma S.B., Zimmerman P.R.. 2007. INDOFLUX: A Biogeochemical Monitoring Network for India. *Science*. I316, 204-205.
148. Misson, L. * **Baldocchi DD**; Black TA; Blanken PD; Brunet Y; Curiel Yuste J*; Dorsey JR*; Falk M*; Granier A; Irvine MR; Jarosz N; Lamaud E; Launiainen, S; Law BE; Longdoz B; Loustau D; McKay M; Paw U KT; Vesala, T; Vickers D; Wilson KB*; Goldstein AH. 2007. Partitioning Forest

Carbon Fluxes with Overstory and Understory Eddy-Covariance Measurements: a Synthesis Based on FLUXNET Data. *Agricultural and Forest Meteorology*. **144**, 14-31

147. Yuan, W. Liu, S., Zhou, G., Tieszen, L.L., **Baldocchi, D.**, Bernhofer, Ch., Gholz, H., Hollinger, D.Y., Hu, Y., Law, B.E., Stoy, P.C., Vesala, T. and other AmeriFlux collaborators. 2007. Deriving a light use efficiency model from eddy covariance flux data for predicting daily gross primary production across biomes. *Agricultural and Forest Meteorology*. **43**, 189-207.
146. Miller, G#. **Baldocchi, DD.**, Law, B. and Meyers, T.P. 2007. An analysis of soil moisture dynamics using multi-year data from a network of micrometeorological observation sites *Advances Water Research*. 30, 1065-1081.
145. Chen, Q#, Gong, P, **Baldocchi, D.D.** and G. Xie. 2007. Filtering airborne laser scanning data with morphological methods. *Photogrammetric Engineering & Remote Sensing*. 73: 175-185
144. Fisher, J.B#., **Baldocchi, D.D.**, Misson, L, Dawson, T.E., Goldstein, A.H. 2007. What the towers don't see at night: nocturnal sap flow in trees and shrubs at two Ameriflux sites in California. *Tree Physiology*, 27: 597-610.
143. Chapin FS, Woodwell GM, Randerson JT, Rastetter EB, Lovett GM, **Baldocchi DD**, Clark DA, Harmon ME, Schimel DS, Valentini R, Wirth C, Aber JD, Cole JJ, Goulden ML, Harden JW, Heimann M, Howarth RW, Matson PA, McGuire AD, Melillo JM, Mooney HA, Neff JC, Houghton RA, Pace ML, Ryan MG, Running SW, Sala OE, Schlesinger WH, Schulze E-D.2006. Reconciling Carbon-cycle Concepts, Terminology, and Methods. *Ecosystems* 9:1041-1050.
142. Sims, D.A.; Rahman, A.F.; Cordova, V. D.; El-Masri, B. Z.; **Baldocchi, D.D.**; Flanagan, L.B.; Goldstein, A.H.; Hollinger, D. Y.; Misson, L.; Monson, R. K.; Oechel, W. C.; Schmid, H. P.; Wofsy, S. C.; Xu, L.*. 2006. On the use of MODIS EVI to assess gross primary productivity of North American ecosystems. *Journal Geophysical Research, Biogeosciences*, Vol. 111, No. G4, G04015. 10.1029/2006JG000162
141. Snyder, R.L., Spano, D., Duce, P., **Baldocchi, D.**, Xu, L. and Paw U., K.T. 2006. A Fuel Dryness Index For Grassland Fire Danger Assessment. *Agricultural and Forest Meteorology*. 139, 1-11.
140. Castellvi, F., Synder, R., **Baldocchi, D.D.**, Martinez-Cob, A. 2006. A Comparison of New and Existing Equations for Estimating Sensible Heat Flux Density using Surface Renewal and Similarity Concepts. *Water Resources Research*. Vol. 42, W08406, doi:10.1029/2005WR004642, 2006
139. Chen Q.#, **Baldocchi D.D.**, Gong P. & Kelly M. 2006. Isolating Individual Trees in a Savanna Woodland using Small Footprint LIDAR data. *Photogrammetric Engineering & Remote Sensing.*, **72**, 923-932.
138. Grant R.F., Zhang Y., Yuan F., Wang S., Hanson P.J., Gaumont-Guay D., Chen J., Black T.A., Barr A., **Baldocchi D.D.** & Arain A. 2006. Intercomparison of techniques to model water stress effects on CO₂ and energy exchange in temperate and boreal deciduous forests. *Ecological Modelling*, **196**, 289-312.
137. Kucharik, C.J., Barford, C. Mustapha, E., Wofsy, S.C., Monson, R.K. and **Baldocchi, D.D.** 2006. Evaluation of a dynamic vegetation model at the forest stand level: vegetation structure,

phenology and seasonal and interannual CO₂ and H₂O vapor exchange at three AmeriFlux study sites. *Ecological Modeling. Ecological Modelling* **196**, 1-31.

136. Heinsch, F.A., Zhao, M., Running, S.W., Kimbal, J.S., Nemani, R.R., Davis, K.J., Bolstad, P.V., Cook, B.D., Desai, A.R., Ricciuto, D.M., Law, B.E., Oechel, W.C., Kwon, H., Luo, H., Wofsy, S.C., Dunn, A.L., Munger, J.W., **Baldocchi, D.D.**, Xu, L., Hollinger, D.Y., Richardson, A.D., Stoy, P.C., Siqueira, M., Monson, R.K., Burns, S., Flanagan, L.B. 2006. Evaluation of remote sensing based terrestrial productivity from MODIS using regional tower eddy flux network observations. *Geoscience and Remote Sensing, IEEE Transactions on* **44**, 1908-1925.
135. **Baldocchi, D.D.**, Tang, J*. Xu, L*. 2006. How Switches and Lags in Biophysical Regulators Affect Spatio-Temporal Variation of Soil Respiration in an Oak-Grass Savanna. *Journal of Geophysical Research, Biogeosciences*. 111, G02008, doi:10.1029/2005JG000063.
134. Kim, J. Guo, Q., **Baldocchi, D.D.**, Leclerc, M Y., Xu, L. *, Schmid, H-P. 2006. Upscaling Fluxes from Tower to Landscape: Overlaying Flux Footprints on High Resolution (IKONOS) Images of Vegetation Cover. *Agricultural and Forest Meteorology*. 136, 132-146.
133. Reichstein, M., Falge, E., **Baldocchi, D.**, Papale, D., Aubinet, M. Berbigier, P., Bernhofer, C., Buchman, N., Gilmanov, T., Granier, A., Grunwald, T., Havrankova, K., Janous, D., Knohl, A., Laurela, T., Lohila, A., Loustau, D., Matteucci, G., Meyers, T., Miglietta, F., Ourcival, J., Rambal, S., Rotenberg, E., Sanz, M. Tenhunen, J., Seufert, G., Vaccari, F., Vesala, T., Yakir, D., Valentini, R., 2005. On the separation of net ecosystem exchange into assimilation and ecosystem respiration: review and improved algorithm, *Global Change Biology*. 11, 1424-1439.
132. Sims, D.A., Rahman, A.F., Cordova, V.D., **Baldocchi, D.D.**, Flanagan, L.B., Goldstein, A.H., Hollinger, D.Y, Misson, L., Monson, R.K. Schmid, H.P., Wofsy, S.C., Xu, L. 2005. Midday values of gross CO₂ flux and light use efficiency during satellite overpasses can be used to directly estimate eight-day mean flux. *Agricultural and Forest Meteorology*. 131, 1-12.
131. **Baldocchi, D.D.**, T.A. Black, P. Curtis, E. Falge, J.D. Fuentes, A Granier, L. Gu, A Knohl, X. Lee, K Pilegaard, HP Schmid, R. Valentini, S. Wofsy, L. Xu¹ and S. Yamamoto. 2005. Predicting the Onset of Carbon Uptake by Deciduous Forests with Soil Temperature and Climate Data: A Synthesis of FLUXNET Data. *International Journal of Biometeorology*. 49, 377-387.
130. Tang, J.* , **Baldocchi, D.D.**, Xu, L.* 2005. Tree photosynthesis modulates soil respiration in a savanna ecosystem. *Global Change Biology*. 11, 1298-1304.
129. **Baldocchi, D. D.**, Krebs, T.# and Leclerc, M.Y. 2005. 'Wet/Dry Daisyworld': A Conceptual Tool for Quantifying Sub-Grid Variability of Energy Fluxes over Heterogeneous Landscapes. *Tellus B*. 57, 175-188.
128. Tang, J.*# , **Baldocchi, D.D.** 2005. Spatial-temporal Variation of Soil Respiration in an Oak-Grass Savanna Ecosystem in California and its Partitioning into Autotrophic and Heterotrophic Components. *Biogeochemistry*. 73, 183-207.
127. Gu, L. Falge, E., Boden, T., **Baldocchi, D.**, Black, T.A., Saleska, S., Suni, T., Verma, S., Vesala, T., Wofsy, S., Xu, L. 2005. Objective threshold determination for nighttime eddy flux filtering. *Agricultural and Forest Meteorology* 128: 179-197.

126. Strong, C., Fuentes, J., **Baldocchi, D.D.** 2004. Reactive hydrocarbon flux footprints during canopy senescence. *Agricultural and Forest Meteorology* 127:159-173.
125. Xu, L.*, **Baldocchi, D.D.**, Tang, J.* 2004. How Soil Moisture, Rain Pulses and Growth Alter the Response of Ecosystem Respiration to Temperature. *Global Biogeochemical Cycles. Vol.18, No 4, GB4002* 10.1029/2004GB002281
124. Hanson, P.J., J.S. Amthor, S.D. Wullschleger, K.B. Wilson, R.F. Grant, A. Hartley, D. Hui, E.R. Hunt jr., D.W. Johnson, J.S. Kimball, A.W. King, Y. Luo, S.G. McNulty, G. Sun, P.E. Thornton, S. Wang, M. Williams, **D.D. Baldocchi**, and R.M. Cushman. 2004. Carbon and water cycle simulations for an upland oak forest using 13 stand-level models: intermodel comparisons and evaluations against independent measurements. *Ecological Monographs. 74:* 443-489.
123. **Baldocchi, DD**, *Xu L, #Kiang N. 2004. How plant functional-type, weather, seasonal drought and soil physical properties alter water and energy fluxes of an oak-grass savanna and an annual grassland. *Agricultural and Forest Meteorology* 123, 13-39.
122. *Xu L. **Baldocchi D.** 2004. Seasonal variation in carbon dioxide exchange over a Mediterranean annual grassland in California. *Agricultural and Forest Meteorology* 123,79-96.
121. Kelliher, F.M. Ross, D.J., Law, B.E., **Baldocchi, D.D.**, Rodda,N.J. 2004. Carbon and nitrogen mineralization in litter and mineral soil of young and old ponderosa pine forests during summer drought and after wetting. *Forest Ecology and Management.* 191, 201-213.
120. *Wilson KB, **Baldocchi DD**, *Falge E, Aubinet M, Berbigier P, Bernhofer Ch, Dolman H, Field C, Goldstein H, Granier A, Hollinger D, Katul G, Law BE, Meyers T, Moncrieff J, Monson R, Tenhunen J, Valentini R, Verma S, Wofsy S. 2003. The diurnal centroid of ecosystem energy and carbon fluxes at FLUXNET sites. *Journal of Geophysical Research.* doi:10.1029/2001JD001349, 2003.
119. #Tang J, **Baldocchi DD.**, Qi Y, *Xu L. 2003. Assessing soil CO₂ efflux using continuous measurements of CO₂ within the soil profile with small solid-state sensors. *Agricultural and Forest Meteorology.*118, 207-220.
118. *Xu L, **Baldocchi DD.** 2003. Seasonal trend of photosynthetic parameters and stomatal conductance of blue oak (*Quercus douglasii*) under prolonged summer drought and high temperature *Tree Physiology* 23, 865-877.
117. #Sanderman J, Amundson R. **Baldocchi DD.** 2003. The effect of temperature on the residence time of soil organic carbon: a comparative analysis. *Global Biogeochemical Cycles.* doi:10.1029/2001GB001833.
116. **Baldocchi DD.** 2003. Assessing the eddy covariance technique for evaluating the carbon balance of ecosystems. *Global Change Biology* 9, 479-492.
115. *Gu L, **Baldocchi DD**, Wofsy SC, Munger JW, Michalsky JJ, Urbanski SP, Boden TA. 2003. Response of a deciduous forest to the Mt Pinatubo eruption: enhanced photosynthesis. *Science.* 299-2035-2038.

114. **Baldocchi, D.D.** and Bowling, D.R. 2003. Modeling the discrimination of $^{13}\text{CO}_2$ above and within a temperate broadleaved forest canopy on hour to seasonal time scales *Plant, Cell and Environment* 26, 231-244.
113. *Wilson KB, **Baldocchi DD**, Aubinet M, Berbigier P, Bernhofer Ch, Dolman H, Falge E, Field C, Goldstein H, Granier A, Grelle A, Halldor T., Hollinger D, Katul G, Law BE, Lindroth A, Meyers T, Moncrieff J, Monson R, Oechel W, Tenhunen J, Valentini R, Verma S, Vesala T, Wofsy S. 2002. Surface energy partitioning between latent and sensible heat flux at FLUXNET sites. *Water Resources Research* 38, 1294, doi:10.1029/2001WR000989
112. **Baldocchi, DD.** *Wilson, KB, *Gu, L. 2002. Influences of structural and functional complexity on carbon, water and energy fluxes of temperate broadleaved deciduous forest. *Tree Physiology*. 22:1065–1077.
111. *Gu LH, **Baldocchi D.** 2002. Fluxnet 2000 synthesis - Foreword . *Agricultural and Forest Meteorology* 113: 1-2.
110. *Falge, E., **Baldocchi, D.**, Tenhunen, J., Aubinet, M., Bakwin, P., Berbigier, P., Bernhofer, Ch., Burba, G., Clement, R., Davis, K.J., Elbers, J.A., Goldstein, A.H., Grelle, A., Granier, A, Guðmundsson, J., Hollinger, D., Kowalski, A, Katul,G., Law,B, Malhi,Y., Meyers,T., Monson,R., Munger,JW, Oechel,W., Paw U,KT., Pilegaard,K, Rannik,U, Rebmann, C, Suyker,A, Valentini, R., *Wilson,K, and Wofsy, S. 2002. Seasonality of ecosystem respiration and gross primary production as derived from FLUXNET measurements. *Agricultural and Forest Meteorology*. 113, 53-74.
109. *Wilson, K.B., Goldstein, A.H., *Falge, E., Aubinet, M., **Baldocchi, D.**, Berbigier, P., Bernhofer, Ch., Ceulemans, R., Dolman, H., Field, C., Grelle, A., Law,B., Meyers,T., Moncrieff, J., Monson, R., Oechel,W., Tenhunen, J., Valentini, R. and Verma, S. 2002. Energy balance closure at FLUXNET sites. *Agricultural and Forest Meteorology*. 113, 223-243.
108. Law, B.E., *Falge, E., *Gu, L., **Baldocchi, D.**, Bakwin, P., Berbigier, P., Davis, K.J., Dolman, H., Falk, M., Fuentes, J., Goldstein, A.H., Granier, A, Grelle, A., Hollinger, D., Janssens, I., Jarvis, P., Jensen, N.O. Katul,G., Malhi,Y., Matteucci, G., Monson,R., Munger, JW, Oechel,W., Olson, R., Pilegaard, K, Paw U, KT, Thorgeirsson, H, Valentini, R., Verma, S. Vesala, T., *Wilson,K, and Wofsy,S. 2002. Environmental controls over carbon dioxide and water vapor exchange of terrestrial vegetation. *Agricultural and Forest Meteorology*. 113, 97-120.
107. *Falge, E., Tenhunen, J., **Baldocchi, D.** Aubinet, M., Bakwin, P., Berbigier, P., Bernhofer, Ch., Bonnefond, J-M, Burba, G., Clement, R., Davis, K.J., Elbers, J.A., Falk, M., Goldstein, A.H., Grelle, A, Granier, A, Grünwald, T, Guðmundsson, J., Hollinger, D., Janssens, I., Keronen,P., Kowalski,A, Katul,G., Law,B, Malhi,Y., Meyers,T., Monson,R., Moors,E., Munger,JW, Oechel,W., Paw U,KT., Pilegaard,K, Rannik,U, Rebmann,R, Suyker,A, Thorgeirsson,H, Tirone,G, Turnipseed,A, *Wilson,K, and Wofsy,S. 2002. Phase and amplitude of ecosystem carbon release and uptake potential as derived from FLUXNET measurements. *Agricultural and Forest Meteorology*.113, 75-95.
106. Anthoni, P.M., Irvine, J., Unsworth, M.H., **Baldocchi, D.D.**, Moore, D., and Law, B.E. 2002. Seasonal differences in carbon and water vapor exchange in young and old-growth ponderosa pine ecosystems. *Agricultural and Forest Meteorology*. 111, 203-222.

105. *Gu, L., **D.D. Baldocchi**, S. B. Verma, T. A. Black, T. Vesala, *E. M. Falge, P.R. Dowty. 2002. Superiority of diffuse radiation for terrestrial ecosystem productivity. *Journal of Geophysical Research* 107 (D6), 10.1029/2001JD001242.
104. *Wilson, K.B. and **D.D. Baldocchi**. 2001. Comparing independent estimates of carbon dioxide exchange over five years at a deciduous forest in the southern United States. *Journal of Geophysical Research*. 106: 34167-34178.
103. Law, B.E, Kelliher, F.M, **Baldocchi, D.D.**, Anthoni, P.M. and Irvine, J. 2001. Spatial and temporal variation in respiration in a young Ponderosa pine forest during a summer drought. *Agricultural and Forest Meteorology*. 110: 27-43.
102. **Baldocchi, DD**, *Falge, E, *Gu, L., R. Olson, D. Hollinger, S. Running, P. Anthoni, Ch. Bernhofer, K. Davis, J. Fuentes, A. Goldstein, G. Katul, B. Law, X. Lee, Y. Malhi, T. Meyers, J.W. Munger, W. Oechel, KT Paw U, K. Pilegaard, H.P. Schmid, R. Valentini, S. Verma, T. Vesala, *K. Wilson and S. Wofsy. 2001. FLUXNET: A New Tool to Study the Temporal and Spatial Variability of Ecosystem-Scale Carbon Dioxide, Water Vapor and Energy Flux Densities *Bulletin of the American Meteorological Society* 82: 2415-2434.
101. Law, B.E., A. Cescatti, **D.D. Baldocchi**. 2001. Leaf area distribution and radiative transfer in open-canopy forests: implications to mass and energy exchange. *Tree Physiology*.21: 777-787.
100. **Baldocchi, D.D.** and *K.B.Wilson. 2001. Modeling CO₂ and water vapor exchange of a temperate broadleaved forest across hourly to decadal time scales. *Ecological Modeling*.142, 155-184.
99. *Wilson, K.B., **D.D. Baldocchi** and P.J. Hanson. 2001. Leaf age affects the seasonal pattern of photosynthetic capacity and net ecosystem exchange of carbon in a deciduous forest. *Plant, Cell and Environment*. 24, 571-583.
98. Law, B.E., S. van Tuyl, A. Cescatti and **D.D. Baldocchi**. 2001. Estimation of leaf area index in open canopy ponderosa pine forests at different successional stages and management treatments in Oregon. *Agricultural and Forest Meteorology*. 108, 1-14.
97. *Falge E., **Baldocchi, D.D.**, Olson, R.J., P Anthoni, M Aubinet, Ch Bernhofer, G Burba, R Ceulemans, R Clement, H Dolman, A Granier, P Gross, Th Grünwald, D Hollinger, N-O Jensen, G Katul, P Keronen, A Kowalski, Chun Ta Lai, B E. Law, T Meyers, J Moncrieff, E Moors, J. W Munger, K Pilegaard, Ü Rannik, C Rebmann, A Suyker, J Tenhunen, K Tu, S Verma, T Vesala, *K Wilson, Steve Wofsy. 2001. Gap filling strategies for long term energy flux data sets. *Agricultural and Forest Meteorology*. 107, 71-77.
96. *Falge, E., **D. Baldocchi**, R. Olson, P. Anthoni, M. Aubinet, Ch. Bernhofer, G. Burba, R. Ceulemans, R. Clement, H. Dolman, A. Granier, P. Gross, T. Grünwald, D. Hollinger, N-O Jensen, G. Katul, P. Keronen, A. Kowalski, CT Lai, B. Law, T. Meyers, J. Moncrief, E.J. Moors, W. Munger, K. Pilegaard, U. Rannik, C. Rebmann, A. Sukyer, J. Tenhunen, K. Tu, S. Verma, T. Vesala, *K. Wilson, S. Wofsy. 2001. Gap filling strategies for defensible annual sums of net ecosystem exchange. *Agricultural and Forest Meteorology*. 107, 43-69.
95. **Baldocchi, D.D.**, *E. Falge and *K. Wilson. 2001. A spectral analysis of biosphere-atmosphere trace gas flux densities and meteorological variables across hour to multi-year time scales. *Agricultural and Forest Meteorology*. 107, 1-27.

94. *Wilson, K.B., P.J. Hanson, P. Mulholland, **D.D. Baldocchi** and S. Wullschleger. 2001. A comparison of methods for determining forest evapotranspiration and its components: sap flow, soil water budget, eddy covariance and catchment water balance. *Agricultural and Forest Meteorology*. 106, 153-168.
93. Chapin, F.S., A.D. McGuire, J. Randerson, R. Pielke, **D. Baldocchi**, S.E. Hobbie, N. Roulet, W. Eugster, E. Kasischke, E.B. Rastetter, S.A. Zimov, and S.W. Running. 2000. Arctic and boreal ecosystems of western North America as components of the climate system. *Global Change Biology*, 6, 211-223.
92. **Baldocchi, D.D.**, F.M. Kelliher, T.A. Black and P.G. Jarvis. 2000. Climate and vegetation controls on boreal zone energy exchange. *Global Change Biology*. 6, 69-83.
91. Eugster, W., W.R. Rouse, R. Pielke, Sr., J. McFadden, **D. Baldocchi**, T. Kittell, F.S. Chapin, G. Liston, P. Vidale, Y. Vagonov and S. Chambers. 2000. Land-atmosphere exchange in Arctic tundra and boreal forests: available data and feedbacks to climate. *Global Change Biology*. 6, 84-115.
90. Fuentes, J.D. B.P. Hayden, M. Garstang, M. Lerdau, D. Fitzjarrald, **D.D. Baldocchi**, R. Monson, B. Lamb and C. Geron. 2000. VOCs and biosphere-atmosphere feedbacks. *Atmospheric Environment*. 35, 189-191.
89. Paw U, K.T. **D.D. Baldocchi**, T.P. Meyers and *K.B. Wilson. 2000. Correction of eddy covariance measurements incorporating both advective effects and density fluxes. *Boundary Layer Meteorology*. 97, 487-511.
88. Rasch P.J., Feichter J., Law K., Mahowald N., Penner J., Benkovitz, C., Genthon C., Giannakopoulos C., Kasibhatla P., Koch D., Levy H., Maki T., Prather M., Roberts D.L., Roelofs G.-J., Stevenson D., Stockwell R., Taguchi S., Kritz M., Chipperfield M., **Baldocchi D.**, McMurry P., Barrie L., Balkanski Y., Chatfield R., Kjellstrom E., Lawrence M., Lee H.N., Lelieveld J., Noone K.J., Seinfeld J., Stenchikov G., Schwartz S., Walcek C., Williamson D., 2000 A comparison of scavenging and deposition processes in global models: results from the WCRP Cambridge Workshop of 1995. *Tellus* vol. 52B, 1025-1056.
87. Law, B., M. Williams, P. Anthoni, **D.D. Baldocchi** and M.H. Unsworth. 2000. Measuring and modeling seasonal variation of carbon dioxide and water vapor exchange of a *Pinus ponderosa* forest subject to soil water deficit. *Global Change Biology* 6: 613-630.
86. Fuentes, J.D., M. Lerdau, R. Atkinson, **D. Baldocchi**, J.W. Botteneheim, P. Ciccioli, B. Lamb, C. Geron, L. Gu, A. Guenther, T.D. Sharkey, and W. Stockwell. 2000. Biogenic hydrocarbons in the atmospheric boundary layer: a review. *Bulletin of the American Meteorological Society*. 81: 1537-1575.
85. *Wilson, K.B., **D.D. Baldocchi** and P.J. Hanson. 2000. Spatial and seasonal variability of photosynthesis parameters and their relationship to leaf nitrogen in a deciduous forest. *Tree Physiology* 20, 787-797.
84. Canadell, J., H. Mooney, **D. Baldocchi**, J. Berry, J. Ehleringer, C.B. Field, T. Gower, D. Hollinger, J. Hunt, R. Jackson, S. Running, G. Shaver, S. Trumbore, R. Valentini and B. Yoder. 2000. Carbon metabolism of the terrestrial biosphere. *Ecosystems* 3, 115-130.

83. **Baldocchi, D.D.**, J.J. Finnigan, *K.W. Wilson, K.T. Paw U, and *E. Falge. 2000. On measuring net ecosystem carbon exchange in complex terrain over tall vegetation. *Boundary Layer Meteorology*. 96: 257-291.
82. *Wilson, K.B., **D.D. Baldocchi** and P.J. Hanson. 2000. Quantifying stomatal and non-stomatal limitation to carbon assimilation resulting from leaf aging and drought in a mature deciduous tree species. *Tree Physiology* 20, 565-587.
81. **Baldocchi, D.D.**, B.E. Law and P. Anthoni. 2000. On measuring and modeling energy fluxes above the floor of a homogeneous and heterogeneous conifer forest. *Agricultural and Forest Meteorology* 102, 187-206.
80. *Wilson, K, P.J. Hanson and **D.D. Baldocchi**. 2000. Factors controlling evaporation and energy partitioning beneath a deciduous forest over an annual cycle. *Agricultural and Forest Meteorology*. 102, 83-103.
79. *Wilson, K.B. and **D.D. Baldocchi**. 2000. Seasonal and interannual variability of energy fluxes over a broadleaved temperate deciduous forest. *Agricultural and Forest Meteorology* 100: 1-18.
78. Bowling, D.R., **D.D. Baldocchi** and R.K. Monson. 1999. Dynamics of isotope exchange of carbon dioxide in a Tennessee deciduous forest. *Global Biogeochemical Cycles*. 13, 903-921.
77. Running, S.W., **D.D. Baldocchi**, D. Turner S.T. Gower, P. Bakwin and K. Hibbard. 1999. A global terrestrial monitoring network, scaling tower fluxes with ecosystem modeling and EOS satellite data. *Remote Sensing of the Environment*. 70, 108-127.
76. Bowling, D.R., A.C. Delany, A.A. Turnipseed, **D.D. Baldocchi** and R.K. Monson. 1999. Modification of the relaxed eddy accumulation technique to maximize measured scalar mixing ratio differences in updrafts and downdrafts. *Journal of Geophysical Research*. 104, 9121-9133.
75. Malhi, Y., **D.D. Baldocchi** and P.G. Jarvis. 1999. The carbon balance of tropical, temperate and boreal forests. *Plant, Cell and Environment*. 22, 715-740.
74. Law, B.E., **D.D. Baldocchi**, P.M. Anthoni. 1999. Below canopy and soil CO₂ fluxes in a Ponderosa pine forest. *Agricultural and Forest Meteorology*. 94, 171-188.
73. **Baldocchi, D.D.**, J. Fuentes, D. Bowling, A. Turnipseed and R. Monson. 1999. Scaling isoprene fluxes from leaves to canopies: test cases over a boreal aspen and a mixed temperate forest. *Journal of Applied Meteorology*, 38: 885-898.
72. Fuentes, JD, **Baldocchi DD**, Lamb B. 1999. Hydrocarbon Special Issue. *Journal of Applied Meteorology*, 38: 849-854.
71. Hall, B., C. Claiborn and **D.D. Baldocchi**. 1999. Measurement and modeling of the dry deposition of peroxides. *Atmospheric Environment*. 33: 577-589.
70. Steffen, W., I. Noble, J. Canadell, M. Apps, d. Schulze, P. Jarvis, **D. Baldocchi**, P. Ciais, W. Cramer, J. Ehleringer, G. Farquhar, C. Field, A. Ghazi, R. Gifford, M. Heimann, R. Houghton, P. Kabat, C. Korner, E. Lambin, S. Linder, J. Lloyd, H. Mooney, D. Murdiyarso, W. Post, C. Prentice, M. Raupach, D. Schimel, A. Shvidenko, R. Valentini. 1998. The terrestrial carbon cycle: implications for the Kyoto protocol. *Science*. 280: 1393-1394

69. Bowling, D.R., A.A. Turnipseed, A.C. Delany, **D.D. Baldocchi**, J.P. Greenberg and R.K. Monson. 1998. The use of relaxed eddy accumulation to measure biosphere-atmosphere exchange of isoprene and other biological trace gases. *Oecologia* 116: 306-315.
68. **Baldocchi, D.D** and T.P. Meyers. 1998. On using eco-physiological, micrometeorological and biogeochemical theory to evaluate carbon dioxide, water vapor and gaseous deposition fluxes over vegetation. *Agricultural and Forest Meteorology* 90: 1-26.
67. Sharkey, T.D., F. Loreto, **D. Baldocchi** and A. Guenther. 1997. The BEMA project: A North American perspective. *Atmospheric Environment*. 31: 251-255.
66. Sellers, P.J., F.G. Hall, R.D. Kelly, A. Black, **D. Baldocchi**, J. Berry, H. Margolis, M. Ryan, J. Ranson, P. Crill, D. Lettenmaier, J. Cihlar, J. Newcomer, D. Halliwell, D. Fitzjarrald, P. Jarvis, S. Gower, D. Williams, B. Goodison, D. Wickland and F. Guertin. 1997. Boreas in 1997: Scientific results, experimental overview and future directions. *Journal of Geophysical Research*. 102: 28731-28770.
65. Bonan, G.B., K.J. Davis, **D.D. Baldocchi**, D. Fitzjarrald and H. Neumann. 1997. Comparison of the NCAR LSM1 land surface model with BOREAS aspen and jack pine tower fluxes: *Journal of Geophysical Research*. 102: 29065-29076.
64. Lavigne, M.B., M.G. Ryan, D.E. Anderson, **D.D. Baldocchi**, P.M. Crill, D.R. Fitzjarrald, M.L. Goulden, S.T. Gower, J.M. Massheder, J.H. McCauley, M. Rayment, and R.G. Striegl. 1997. Comparing nocturnal eddy covariance measurements to estimates of ecosystem respiration made by scaling chamber measurements. *Journal of Geophysical Research*. 102: 28977-28986.
63. Desjardins, R.L., J.I. MacPherson, L. Mahrt, P. Schuepp, E. Pattey, H. Neumann, **D. Baldocchi**, S. Wofsy, D. Fitzjarrald and H. McCaughey. 1997. Scaling up flux measurements for the boreal forest using aircraft-tower combinations. *Journal of Geophysical Research* 102: 29125-29134.
62. Norman, J.M., C.J. Kucharik, S.T. Gower, **D.D. Baldocchi**, P.M. Crill, M. Rayment, K. Savage and R.G. Striegl. 1997. A comparison of six methods for measuring soil surface carbon dioxide fluxes. *Journal of Geophysical Research* 102: 28771-28778.
61. **Baldocchi, D.D.**, C.A. Vogel and B. Hall. 1997. Seasonal variation of energy and water vapor exchange rates above and below a boreal jackpine forest. *Journal of Geophysical Research* 102: 28939-28952.
60. **Baldocchi, D.D.** 1997. Flux footprints under forest canopies. *Boundary Layer Meteorology* 85: 273-292.
59. **Baldocchi, D.D.** 1997. Measuring and modeling carbon dioxide and water vapor exchange over a temperate broad-leaved forest during the 1995 summer drought. *Plant, Cell and Environment*. 20: 1108-1122.
58. Saugier, B., A. Granier, J.Y. Pontailler, E. Dufrene and **D.D. Baldocchi**. 1997. Transpiration of a boreal pine forest, measured by branch bags, sapflow and micrometeorological methods. *Tree Physiology*. 17: 511-520.

57. **Baldocchi, D.D.**, C.A. Vogel and B. Hall. 1997. Seasonal variation of carbon dioxide exchange rates above and below a boreal jackpine forest. *Agricultural and Forest Meteorology* 83: 147-170.
56. Guenther, A. W. Baugh, K. Davis, P. Harley, L. Klinger, P. Zimmerman, E. Allwine, S. Dilts, B. Lamb, H. Westberg, **D. Baldocchi**, C. Geron and T. Pierce. 1996. Leaf, canopy and landscape isoprene fluxes from an oak-pine-mixed deciduous forest. *Journal of Geophysical Research*. 101 : 18555-18568.
55. Lamb, B., E. Allwine, S. Dilts, H. Westberg, T. Pierce, C. Geron, **D. Baldocchi**, A. Guenther, L. Klinger, P. Harley and P. Zimmerman. 1996. Evaluation of forest canopy models for estimating isoprene emissions. *Journal of Geophysical Research*. 101 : 22787-22797.
54. *Greco, S. and **D.D. Baldocchi**. 1996. Seasonal variations of CO₂ and water vapor exchange rates over a temperate deciduous forest. *Global Change Biology*. 2: 183-198.
53. **Baldocchi, D.D.**, R.Valentini, S.R. Running, W. Oechel and R. Dahlman. 1996. Strategies for measuring and modelling CO₂ and water vapor fluxes over terrestrial ecosystems. *Global Change Biology*.2: 159-168.
52. **Baldocchi, D.D.** and *C.Vogel. 1996. A comparative study of water vapor, energy and CO₂ flux densities above and below a temperate broadleaf and a boreal pine forest. *Tree Physiology*. 16: 5-16.
51. **Baldocchi, D.D.** and K.S. Rao. 1995. Intra-field variability of scalar flux densities across a transition between a desert and an irrigated potato field. *Boundary Layer Meteorology*. 76. 109-136.
50. Sellers, P.J., F.G. Hall, H.Margolis, B. Kelly, **D. Baldocchi**, J. denHartog, J.Cihlar, M.Ryan, B. Goddison, P.Crill, J.Ranson, D.Lettenmaier and D. Wickland. 1995. Boreal Ecosystem Atmosphere (BOREAS): an overview and early results from the 1994 field year. *Bulletin of the American Meteorological Society*. 76: 1549-1577.
49. Ruimy, A., P.G. Jarvis, **D.D. Baldocchi** and B.Saugier. 1995.CO₂ fluxes over plant canopies: a literature review. *Advances in Ecological Research*. 26: 1-68.
48. *Vogel, C.A., **D.D. Baldocchi**, A.K. Luhr and K.S. Rao. 1995. A comparison of a hierarchy of models for determining energy balance components over vegetation canopies. *Journal of Applied Meteorology*. 34: 2182-2196.
47. **Baldocchi, D.D.**, A. Guenther, P.C. Harley, L.Klinger, P.Zimmerman, B.Lamb and H. Westberg. 1995. The fluxes and air chemistry of isoprene above a deciduous hardwood forest. *Proceedings of the Royal Society of London, A*. 351: 279-296.
46. Harley, P.C. and **Baldocchi, D.D.**, 1995. Scaling carbon dioxide and water vapor exchange from leaf to canopy in a deciduous forest: leaf level parameterization. *Plant, Cell and Environment*. 18: 1146-1156.
45. **Baldocchi, D.D.** and P.C. Harley. 1995. Scaling carbon dioxide and water vapor exchange from leaf to canopy in a deciduous forest: model testing and application. *Plant, Cell and Environment*. 18: 1157-1173.

44. **Baldocchi, D.D.** 1994. An analytical solution for coupled leaf photosynthesis and stomatal conductance models. *Tree Physiology* 14: 1069-1079.
43. Erisman, Jan Willem and **D.D. Baldocchi.** 1994. Modeling dry deposition of SO₂. *Tellus* 46B, 159-171.
42. **Baldocchi, D.D.** 1994. A comparative study of mass and energy exchange over a closed (wheat) and an open (corn) canopy: II. Canopy CO₂ exchange and water use efficiency. *Agricultural and Forest Meteorology.* 67: 291-322.
41. **Baldocchi, D.D.** 1994. A comparative study of mass and energy exchange over a closed (wheat) and an open (corn) canopy: I. the partitioning of available energy into latent and sensible heat exchange. *Agricultural and Forest Meteorology* 67: 191-220.
40. Meyers, T.P. and **D.D. Baldocchi.** 1993. Trace gas exchange above the floor of a deciduous forest. II. SO₂ and O₃ deposition. *Journal of Geophysical Research.* 98: 12631-12638.
39. Doran, J.C., F.J. Barnes, R.L. Coulter, T.L. Crawford, **D.D. Baldocchi,** L. Balick, D.R. Cook, D. Cooper, R.J. Dobosy, W.A. Dugas, L. Fritschen, R.L. hart, L. Hipps, J.M. Hubbe, W. Gao, R.Hicks, R.R. Kirkham, K.E. Kunkel, T.J. Martin, T.P.Meyers, W.Porch, J.D.Shannon, W.J.Shaw, E.Swiatek, C.D. Whiteman. 1992. The Boardman Regional Flux Experiment *Bulletin of the American Meteorological. Society.* 73: 1785-1795.
38. **Baldocchi, D.D.** 1992. A Lagrangian random walk model for simulating water vapor, CO₂, and sensible heat flux densities and scalar profiles over and within a soybean canopy. *Boundary Layer Meteorology.* 61:113-144.
37. Grant, R.F. and **Baldocchi, D.D.** 1992. Energy transfer over crop canopies: simulation and experimental verification. *Agricultural and Forest Meteorology.* 61: 129-149.
36. Chason, J., **D.D. Baldocchi** and M. Huston. 1991. A comparison of direct and indirect methods for estimating forest canopy leaf area. *Agricultural and Forest Meteorology* 57:107-128.
35. Fowler, D., J. Duyzer, and **D.D. Baldocchi.** 1991. Inputs of trace gases, particles and cloud droplets to terrestrial surfaces. *Proceedings Royal Society of Edinburgh.* 97B 35-59.
34. **Baldocchi, D.D.,** R.J. Luxmoore and J.L. Hatfield. 1991. How to discern the forest from the trees: an essay on scaling canopy stomatal conductance. *Agricultural and Forest Meteorology.* 54: 197-226.
33. **Baldocchi, D.D.** and T.P. Meyers. 1991. Trace gas exchange at the floor of a deciduous forest: I. evaporation and CO₂ efflux. *Journal Geophysical Research, Atmospheres.* 96: 7271-7285.
32. Meyers, T.P. and **D.D. Baldocchi.** 1991. The budgets of turbulent kinetic energy and momentum flux within and above a forest canopy. *Agricultural and Forest Meteorology,* 53: 207-22.
31. **Baldocchi, D.D.,** R. White and J.W. Johnston. 1989. A wind tunnel study to design large, open-top chambers for whole-tree, pollutant exposure experiments. *Journal of the Air Pollution Control Association.* 39: 1549-1556.

30. **Baldocchi, D.D.** and T.P. Meyers. 1989. The effects of extreme turbulent events on the estimation of aerodynamic variables in a deciduous forest canopy. *Agricultural and Forest Meteorology*. 48: 117-134.
29. **Baldocchi, D.D.** 1989. Turbulence transfer in a deciduous forest. *Tree Physiology*. 5: 357-377.
28. *Wang, H. and **D.D. Baldocchi**. 1989. A numerical model for canopy radiation within a deciduous forest. *Agricultural and Forest Meteorology*. 46:313-337.
27. **Baldocchi, D.D.** and T.P. Meyers. 1988. A spectral and lag-correlation analysis of turbulence in a deciduous forest canopy. *Boundary Layer Meteorology*. 45:31-58.
26. Meyers, T.P. and **D.D. Baldocchi**. 1988. A comparison of models for deriving dry deposition fluxes of O₃ and SO₂ to a plant canopy. *Tellus*. 40B: 270-284.
25. **Baldocchi, D.D.**, B.B. Hicks and T.P. Meyers. 1988. Measuring biosphere-atmosphere exchanges of biologically related gases with micrometeorological methods. *Ecology*. 69:1331-1340.
24. **Baldocchi, D.D.** 1988. A multi-layer, resistance-analog model for estimating sulfur dioxide deposition to a deciduous oak forest canopy. *Atmospheric Environment*. 22: 869-884.
23. **Baldocchi, D.D.** and T.P. Meyers. 1988. Turbulence structure in a deciduous forest. *Boundary Layer Meteorology*. 43: 345-365.
22. **Baldocchi, D.D.** and B.A. Hutchison. 1988. Turbulence in an almond orchard: spatial variations in spectra and coherence. *Boundary Layer Meteorology*. 42: 293-311.
21. Hicks, B.B., **D.D. Baldocchi**, T.P. Meyers, D.R. Matt and R.P. Hosker, Jr. 1987. A multiple resistance routine for deriving dry deposition velocities from measured quantities. *Water Air and Soil Pollution*. 36: 311-330.
20. **Baldocchi, D.D.** and B.A. Hutchison. 1987. Turbulence in an almond orchard: vertical variations in turbulent statistics. *Boundary Layer Meteorology*. 40: 127-146.
19. **Baldocchi, D.D.**, S.B. Verma and D.E. Anderson. 1987. Canopy photosynthesis and water use efficiency in a deciduous forest. *Journal Applied Ecology*. 24: 251-260.
18. **Baldocchi, D.D.**, B.B. Hicks and P. Camara. 1987. Canopy stomatal resistance model for gaseous deposition to vegetated canopies. *Atmospheric Environment*. 21:91-101.
17. **Baldocchi, D.D.**, S.B. Verma, D.E. Anderson and D.R. Matt. 1986. Eddy correlation measurements of CO₂ efflux from the floor of an oak-hickory forest. *Journal Applied Ecology*. 23: 967-977.
16. **Baldocchi, D.D.** and B.A. Hutchison. 1986. On estimating canopy photosynthesis and stomatal conductance in a deciduous forest with clumped foliage. *Tree Physiology*. 2: 155-168.
15. Anderson, D.E., S.B. Verma, R.E. Clement, **D.D. Baldocchi** and D.R. Matt. 1986. Turbulence spectra of CO₂, water vapor, temperature and velocity over a deciduous forest. *Agricultural Forest Meteorology*. 38:81-99.

14. Verma, S.B., **D.D. Baldocchi**, D.E. Anderson, D.R. Matt and R.E. Clement. 1986. Eddy Fluxes of CO₂, water vapor and sensible heat over a deciduous forest. *Boundary Layer Meteorology*. 36:71-91.
13. **Baldocchi, D.D.**, B.A. Hutchison, D.R. Matt and R.T. Mc Millen. 1986. Seasonal variations in the statistics of photosynthetically active radiation penetration in an oak-hickory forest. *Agricultural Forest Meteorology*. 36:343-361.
12. **Baldocchi, D.D.**, S.B. Verma, N.J. Rosenberg, B.L. Blad and J.E. Specht. 1985. Microclimate-plant architecture interactions: influence of leaf width on the mass and energy exchanges of a soybean canopy. *Agricultural Forest Meteorology*. 35:1-20.
11. **Baldocchi, D.D.**, S.B. Verma and N.J. Rosenberg. 1985. Water use efficiency in a soybean field: influence of plant water stress. *Agricultural Forest Meteorology* 34:54-65.
10. **Baldocchi, D.D.**, B.A. Hutchison, D.R. Matt and R.T. McMillen. 1985. Canopy radiative transfer models for spherical and known leaf inclination distribution angles: a test in an oak-hickory forest. *Journal Applied Ecology*. 22:539-555.
9. **Baldocchi, D.D.**, B.A. Hutchison, D.R. Matt and R.T. McMillen. 1984. Seasonal variations in the radiation regime within an oak-hickory forest. *Agricultural Forest Meteorology*. 33:177-191.
8. **Baldocchi, D.D.**, D.R. Matt, B.A. Hutchison and R.T. McMillen. 1984. Solar radiation within an oak-hickory forest: an evaluation of extinction coefficients for several radiation components during fully-leafed and leafless periods. *Agricultural Forest Meteorology*. 32:307-322.
7. **Baldocchi, D.D.**, S.B. Verma, N.J. Rosenberg, B.L. Blad, A. Garay and J.E. Specht. 1983. Influence of leaf pubescence on the mass and energy exchange between soybean canopies and the atmosphere. *Agronomy Journal*. 75:537-542.
6. **Baldocchi, D.D.**, S.B. Verma, N.J. Rosenberg, B.L. Blad, A. Garay and J.E. Specht. 1983. Influence of water stress on the diurnal exchange of mass and energy between the atmosphere and a soybean canopy. *Agronomy Journal*. 75:543-548.
5. **Baldocchi, D.D.**, S.B. Verma and N.J. Rosenberg. 1983. Microclimate within soybeans. *Agricultural Meteorology*. 28:321-337.
4. **Baldocchi, D.D.**, S.B. Verma and N.J. Rosenberg. 1983. Characteristics of air flow above and within soybean canopies. *Boundary Layer Meteorology*. 25:43-54.
3. **Baldocchi, D.D.**, S.B. Verma and N.J. Rosenberg. 1981. Mass and energy exchange of a soybean canopy under various environmental regimes. *Agronomy Journal*. 73:706-710.
2. **Baldocchi, D.D.**, S.B. Verma and N.J. Rosenberg. 1981. Environmental effects on the carbon dioxide flux and carbon dioxide-water flux ratio of alfalfa. *Agricultural Meteorology*. 24: 175-184.
1. **Baldocchi, D.D.**, S.B. Verma and N.J. Rosenberg. 1981. Seasonal and diurnal variation in the carbon dioxide and carbon dioxide-water flux ratio of alfalfa. *Agricultural Meteorology*. 23: 231-244.

BOOK CHAPTERS

36. Davis, F., **Baldocchi, D.D.**, Tyler, C. 2016. Oak Woodlands. In *Ecosystems of California*, University of California Press. H.A. Mooney and E. Zavaleta, Editors.
35. **Baldocchi, D.**, 2013: Ecosystem Services of Energy Exchange and Regulation. *Climate Vulnerability: Understanding and Addressing Threats to Essential Resources*. Elsevier Inc., Academic Press, 81–92 pp.
34. Papale, D. Dario Papale, Deborah A. Agarwal, **Dennis Baldocchi**, Robert B. Cook and Joshua B. Fisher Catharine van Ingen. 2012. Database Maintenance, Data Sharing Policy, Collaboration. In: *Eddy Covariance: A Practical Guide to Measurement and Data Analysis*. Editors. M Aubinet, D. Papale. Springer pp 399-424
33. **Baldocchi, DD.**, Ryu, Y. 2011. A Synthesis of Forest Evaporation Fluxes— from Days to Years— as Measured with Eddy Covariance. In: *Forest Hydrology and Biogeochemistry: Synthesis of Past Research and Future Directions*, Editors, Del Lavia and Darryl Carlyle-Moses, Ecological Studies, 216. Springer. Pg 101-116. DOI 10.1007/978-94-007-1363-5_5
32. **Baldocchi, D.D.** Chen, Q., Chen, X., Ma, S., Miller, G., Ryu, Y., Xiao, J., Wenk, R. and Battles, J. 2010. The Dynamics of Energy, Water and Carbon Fluxes in a Blue Oak (*Quercus douglasii*) Savanna in California, USA, In: Hill, M. J. and N. P. Hanan, Eds. (2010). *Ecosystem Function in Savannas: measurement and modeling at landscape to global scales*. Boca Raton, CRC Press. Pp 135-151.
31. Running, S.W., Nemani, R.R., Townshend, J.R.G., **Baldocchi, D.D.** 2009. Next-Generation Terrestrial Carbon Monitoring. In: *Carbon Sequestration and Its Role in the Global Carbon Cycle* Brian J. McPherson and Eric T. Sundquist, Editors. Geophysical Monograph Series, Volume 183. American Geophysical Union, Washington, D.C.
30. Hunt, J.R., **Baldocchi, D.D.**, vanIngen, C. 2009. Redefining ecological science using data. In: *The Fourth Paradigm, data-intensive scientific discovery*. Ed. Tony Hey, Stewart Tansley and Kristin Tolle. Microsoft Research, Redmond, WA. Pp 21-26.
29. Gu, L., Post, W.M., **Baldocchi, D.D.** Black, T.A. Suyker, A.E. Verma, S.B. Vesala, T., Wofsy, S.C. 2009. In: *Phenology of Ecosystem Processes*. Asko Noormets, Editor. Springer. Pg 35-58.
28. Meyers TP, **Baldocchi DD.** 2005. Current micrometeorological flux methodologies with applications in agriculture. In: *Micrometeorological Measurements in Agricultural Systems*. Ed. J.L. Hatfield. American Agronomy Society. Pp 381-396.
27. **Baldocchi D.D.**, Liukang Xu. 2005. Carbon Exchange of Deciduous Broadleaved Forests in Temperate and Mediterranean Regions. In: *Carbon Balance of Forest Biomes*. Eds. PJ Jarvis and H Griffiths. BIOS Scientific Publishers Ltd. Pp 187-215.
26. **Baldocchi, DD.** 2005. The role of biodiversity on the evaporation of forests. In: **Forest Diversity and Function: Temperate and Boreal Systems**. Ecological Studies, vol 176. Eds. Michael Scherer-Lorenzen and E. Detlef Schulze. Springer-Verlag, Berlin. Pp. 131-148.
25. **Baldocchi, DD.** Bowling, DR. 2005. Theoretical Examination of Keeling-plot Relationships for Carbon Dioxide in a Temperate Broadleaved Forest with a Biophysical Model, CANISOTOPE. In: **Stable Isotopes and Biosphere-Atmosphere Interactions**. Ed L Flanagan, J.R. Ehleringer, D. Pataki. Academic Press. Pp 109-124.

24. Williams M, Woodward FI, **Baldocchi DD**, Ellsworth D. 2004. CO₂ capture from the leaf to the landscape. In: “**Photosynthetic Adaptation: Chloroplast to the Landscape**”. Eds. W. Smith, T.C. Vogelmann, C. Critchley. Springer. New York. Pp 133-168.
23. Pitman A.J., H. Dolman, B. Kruijt, R. Valentini, **D. Baldocchi**. 2004. The climate near the ground. In: **Vegetation, Water, Humans and the Climate: A New Perspective on an Interactive System**. P. Kabat, M.Claussen, P. A. Dirmeyer, J.H.C. Gash, L. Bravo de Guenni, M. Meybeck, R. A. Pielke, Sr., C. J. Vörösmarty, R. W.A. Hutjes, S.Lütkemeier (Eds.). Springer, Berlin, Germany. Pp 9-19.
22. **Baldocchi, DD**. Valentini R. 2004. Geographic and Temporal Variation of the Mechanisms Controlling Carbon Exchange by Ecosystems and their Sensitivity to Environmental Perturbations. In: **Towards CO₂ stabilization: Issues, Strategies and Consequences, A SCOPE/GCP Rapid Assessment Project**. Chris Field and Michael Raupach, Editors. Pp. 295-315.
21. Gu L, Post W, **Baldocchi DD**, Black TA, Verma SB, Vesala T. 2003. Phenology Of Vegetation Photosynthesis. In: **Phenology, an integrated Environmental Science**. Ed M Schwartz, Kluwer Academic Press.
20. Panek J, Goldstein AH, **Baldocchi, DD**. 2003. The need for spatially and functionally integrated models of ozone deposition to forests. In: **Ozone Air Pollution in the Sierra Nevada – Distribution and Effects on Forests**, eds A Bytnerowicz, M Arbaugh, and R Alonso. pp 325-357
19. **Baldocchi, D.D.** and K. Wilson. 2002. Forest canopies as sources and sinks of atmospheric trace gases (methods for scaling up, contributions of different ecosystems): scaling up to the ecosystem level. In: **Trace Gas Exchange in Forest Ecosystems**, eds. R. Gasche, H. Papen, H. Rennenberg. Kluwer Academic Publishers. Pp. 229-242.
18. Kelliher, F.M., J. Lloyd, C. Rebmann, C. Wirth, E-D. Schulze **D.D. Baldocchi**. 2001. Evaporation in the boreal zone during summer: physics and vegetation. In **Global Biogeochemical Cycles in the Climate System**. Eds Schulze et al. Academic Press. Pp 151-165.
17. Amthor, J.S. and **D.D. Baldocchi**. 2001. Terrestrial Higher-Plant Respiration and Net Primary Production. In: **Terrestrial Global Productivity: Past, Present and Future**. Eds. J. Roy, B. Saugier and H. Mooney. Academic Press. San Diego.
16. **Baldocchi, D.D.** and J.S. Amthor. 2001. Canopy Photosynthesis: History, measurements and models. In: **Terrestrial Global Productivity: Past, Present and Future**. Eds. J. Roy, B. Saugier and H. Mooney. Academic Press. San Diego. Pp. 9-31.
15. Raupach, M.R., **D.D. Baldocchi**, H. Bolle, L. Dumenil, W. Eugster, F. Meixner, J. Olejnik, R. Pielke, Sr., J. Tenhunen, R. Valentini. 1999. How is the Atmospheric coupling of land surfaces affected by topography, complexity in landscape patterning and the vegetation mosaic? In: **Integrating Hydrology, Ecosystem Dynamics and Biogeochemistry in Complex Landscapes**. Dahlem Konferenzen. Berlin.
14. Valentini, R., **D. Baldocchi**, J. Tenhunen. 1999. Ecological Controls on Land Surface Atmospheric Interactions. In: **Integrating Hydrology, Ecosystem Dynamics and Biogeochemistry in Complex Landscapes**. Dahlem Konferenzen. Pp 117-146

13. Luxmoore, R.J. and **D.D. Baldocchi**. 1995. Modelling Interactions of carbon dioxide, forests and climate. In: **Biotic Feedbacks in the Global Climatic System: Will the Warming Speed the Warming?** ed. G.M. Woodwell and F.T. MacKenzie. Oxford University Press. pp. 283-303.
12. **Baldocchi, D.D.** and Serge Collineau. 1994. The Physical Nature of Light in Heterogeneous Canopies: Spatial and Temporal Attributes. In: **Exploitation of Environmental Heterogeneity by Plants: Ecophysiological Processes Above and Below Ground.** (eds. M.M Caldwell and R.W. Pearcy). Academic Press. San Diego, CA . pp. 21-72.
11. **Baldocchi, D.D.** 1993. Deposition of gaseous sulfur compounds to vegetation. In: **Sulfur Nutrition and Assimilation in Higher Plants: Physiological Functions and Environmental Significances.** eds. De Kok, L.J., I. Stulen, H. Rennenberg, C. Brunold and W.E. Rauser. SPB Academic Publishing, The Hague, Netherlands. pp. 271-294.
10. **Baldocchi, D.D.** 1993. Scaling water and carbon exchange from leaves to a canopy: rules and tools. In: **Scaling Physiological Processes: Leaf to Globe** (eds. J. Ehleringer and C.B. Field) Academic Press. pp. 77-114.
9. **Baldocchi, D.D.** 1992. On estimating HNO₃ deposition to a deciduous forest with a Lagrangian random-walk model. In: **Precipitation Scavenging and Atmospheric-Surface Exchange Processes.** eds. S.E. Schwartz and W.G.N. Slinn. Hemisphere Press. pp. 1081-1094.
8. Schimel, J., Robertson, G.P., **Baldocchi, D.D.**, Bogner, J., Davidson, E., Duyzer, J., Ehhalt, D., Fowler, D., Groffman, P., Haider, K., Isadorov, V., Klemedtsson, L., Melillo, J., Smith, K., Su, W.H. and Wieprecht, W. 1993. Impacts of trace gas fluxes in mid-latitude ecosystems. In: **Ecological Bulletins 42, Trace Gas Exchange in a Global Perspective.** eds. D.S. Ojima and B.H. Svensson. Munksgaard Int. Booksellers. Copenhagen. pp. 124-132.
7. Strain, B.R. L.H. Allen, **D.D. Baldocchi** et al. 1991. Available technologies for field experimentation with elevated CO₂ in global change research. In: **Ecosystem Experiments** (eds. H.A. Mooney et al.) pp 245-261. Wiley, New York.
6. **Baldocchi, D.D.** 1991. Canopy control of trace gas emissions. In: **Trace Gas Emissions by Plants** (T.D. Sharkey, E.A. Holland and H.A. Mooney, eds) Academic Press. New York. pp. 293-333.
5. Rosswall, T., F. Bak, **D.D. Baldocchi**, R.J. Cicerone, R. Conrad, D.H. Ehhalt, M.K. Firestone, I.E. Galbally, V.F. Galchenko, P. Groffman, H. Papen, W.S. Reeburgh and E. Sanhueza. 1989. What regulates production and consumption of trace gases in ecosystems: biology or physiochemistry? In: **Exchange of Trace Gases Between Terrestrial Ecosystems and the Atmosphere.** (eds) M.O. Andreae and D.S. Schimel. John Wiley and Sons, New York. pp. 73-95.
4. **Baldocchi, D.D.** 1989. Canopy-atmosphere water vapor exchange: can we scale from a leaf to a canopy? In: **Estimation of Areal Evapotranspiration.** (eds) T.A. Black, D.L. Spittlehouse, M.D. Novak and D.T. Price. IAHS Press, Wallingford, UK. pub. 177. pp. 21-41.
3. Taylor, G.E. Jr, **D.D. Baldocchi** and P. Hansen. 1988. Pollutant deposition to individual leaves and plant canopies: sites of regulation and relationship to injury. In: **Assessment of Crop Loss from Air Pollutants.** (Eds.) W.W. Heck, O.C. Taylor and D.T. Tingey. Elsevier Applied Science. London. pp. 227-257.

2. Hutchison, B.A. and **D.D. Baldocchi**. 1989. Forest Meteorology. In: **Analysis of Biogeochemical Cycling Processes in Walker Branch Watershed**. (Eds) D.W. Johnson and R.I. Van Hook. Springer-Verlag. pp. 21-95.
1. Hicks, B.B., T.P. Meyers and **D.D. Baldocchi**. 1988. Aerometric measurement requirements for quantifying dry deposition. In: **Principles of Environmental Sampling**. American Chemical Society Professional Reference Book. pp. 297-315.

BOOK REVIEWS, NEWSLETTERS, ENCYCLOPEDIA ARTICLES, EDITORIALS, BLOG POSTS

29. Baldocchi, D. Berkeley Blog. <http://blogs.berkeley.edu/2017/05/23/this-drought-may-be-over-but-it-is-bound-to-happen-again/>

28. Baldocchi, D. Berkeley Blog. <http://blogs.berkeley.edu/2017/03/15/why-it-is-a-bad-idea-to-burn-more-coal-and-reduce-car-fuel-efficiency-standards-carbon-math-101/>

27. Baldocchi, D. 2015. **California drought: Charge true cost of agricultural water**. **San Francisco Chronicle, June 14**, <http://bit.ly/1IgM0Ts>

26. **Baldocchi, D.** 2013. A Brief History on Eddy Covariance Flux Measurements: A Personal Perspective, FLUXLETTER, vol 5, num 2.

25. **Baldocchi, D.** Koteen, L. 2012. Methane Flux Measurements, New Opportunities for Fluxnet. FLUXLETTER, vol 4, number 3.

24. **Baldocchi, D.** 2012. Gas and energy fluxes across landscapes. In Encyclopedia of Theoretical Ecology. Eds. Alan Hastings and Lou Gross. University of California Press, Berkeley. Pp337-339

23. **Baldocchi, D.** Reichstein, M, Papale, D, Koteen, L. Vargas, R. Agarwal, D., Cook, R. 2012. Role of Flux Networks in Biogeosciences. EOS. 93,217-218

22. **Baldocchi, D.**, Vargas, R., Koteen, L. 2010. Scaling Carbon and Water Fluxes from Patches to the Globe: A Challenge and an Opportunity for the Future. FLUXLETTER, vol 3, num 3.

21. **Baldocchi, D.**, 2011: Global change: The grass response. *Nature*, **476**, 160-161.

20. **Baldocchi, D.** 2009. Forward. In: Phenology of Ecosystem Processes. Asko Noormets, Editor. Springer.

19. **Baldocchi, D.** 2008. FLUXNET, Quo Vadia. FluxLetter, FLUXNET Newsletter, Vol 1. Number 1.

18. **Baldocchi, D.** 2008. Introducing FLUXNET Newsletter. FluxLetter, the FLUXNET Newsletter, Vol 1. Number 2.

17. **Baldocchi, D.** 2005. Carbon cycle under stress. *Nature*. 437, 483-484.

16. **Baldocchi, D.** Gu, L. 2003. Multiple ecosystem interactions lead to overall reduced growth in atmospheric CO₂ Concentration. Global Change Newsletter. #54 IGBP, June 2003.

15. Gu L, **Baldocchi DD**. 2002. Forward. Special Issue on the FLUXNET Synthesis Workshop) *Agricultural and Forest Meteorology*.
14. **Baldocchi, DD**. Review of: 'Vegetation and Terrestrial Carbon Cycle: Modeling the first 400 million years. Cambridge University Press. 405 pp. *Trends in Ecology and Evolution* (in press).
13. Gu, L. **Baldocchi, DD**, Olson RJ, Valentini, R. 2001. FLUXNET advances integrated studies of terrestrial biosphere-atmosphere exchanges of carbon dioxide, water and energy. *BAHC-GEWEX News*, 9: 15-17.
12. **Baldocchi, DD**. Review of: **The Geometry of Ecological Interactions: Simplifying Spatial Complexity** Eds. U. Dieckmann, R. Law and J.A.J. Metz., Cambridge Studies in Adaptive Dynamics. 2000, 564 pp. *Agricultural and Forest Meteorology* 108, 327-328.
11. **Baldocchi, D.D**. 2001. Carbon and energy: terrestrial stores and fluxes. **Encyclopedia of Global Environmental Change**, H. Mooney and P. Canadell. (eds) John Wiley.
10. Gu, L., **Baldocchi, D**, Kiang, N. 2000. FLUXNET evaluates 'breathing patterns' of diverse ecosystems *EOS*, 81,565.
9. Valentini, R., **D.D. Baldocchi**, R. Olson. 1999. FLUXNET: a challenge that is becoming a reality. **Global Change Newsletter**.
8. **Baldocchi, D.D**. 1997. Key word entries on turbulence. **The Encyclopedia of Ecology and Environmental Management**. Blackwell Scientific Publications.
7. Valentini, R. **D.D. Baldocchi**, S. Running. 1997. The IGBP-BAHC global flux network initiative (FLUXNET): current status and perspectives. **Global Change Newsletter**. 28, 14-16.
6. **Baldocchi, DD**. 1996. Review of: **Amazonian Deforestation and Climate**. J. Gash et al. Wiley and Sons. In: *Boundary Layer Meteorology*.
5. **Baldocchi, D.D**. 1996. Review of: **Climate near the Ground**. R.Geiger, Todhunter and Aronson. In: *Climate Change*.
4. **Baldocchi, D.D**. Review of: **Agricultural Ecosystem Effects on Trace Gases and Global Climate Change**. eds. L.A. Harper, A.R. Mosier, J.M. Duxbury and D.E. Rolston. American Society of Agronomy. Madison, WI. 1993. 206 pp.
3. **Baldocchi, D.D**. Review of Calder, I.R. 1991. **Evaporation in the Uplands**. John Wiley and Sons. Chichester, UK. 148 pp. In: *Agricultural. Water Management*. 20:83-84.
2. **Baldocchi, D.D**. 1991. Review of Dixon, R.K., R.S. Meldahl, G.A. Ruark and W.G. Warren. (eds). **Modeling of Forest Growth Responses to Environmental Stress**. Timber Press. Portland, OR 441 pp. In: *Bulletin of American Meteorological Society*. 72: 525-526.
1. **Baldocchi, D.D**. 1989. Review of K.Y. Kondratyev. 1988. **Climate Shocks: Natural and Anthropogenic**. Wiley-Interscience. In: *Journal of Environmental Quality*. 18: 556.

PEER REVIEWED PROCEEDINGS AND TECHNICAL REPORTS

7. Baldocchi, DD. et al. 2005. Agriculture and Climate. California Energy Commission and California Environmental Protection Agency.
6. R. J. Olson, S. K. Holladay, R. B. Cook, E. Falge, **D. Baldocchi**, L Gu. 2004. FLUXNET: Database of fluxes, site characteristics, and flux-community information. **ORNL/TM-2003/204**.
5. Erisman, J.W. and **D.D. Baldocchi**. 1992. Dry Deposition of SO₂. Proc. Workshop of Deposition. Goteborg, Sweden. Nov. 3-6, 1992.
4. van den Hurk, B.J.J.M. and **D.D. Baldocchi**. 1990. Random-walk models for simulating water vapor exchange in a soybean canopy. NOAA Tech. Memo. ERL-ARL 185, 46 pp.
3. **Baldocchi, D.D.** 1989. Turbulent transfer in a broadleaf deciduous forest. Proc. Fourth Australasian Conference on Heat and Mass Transfer. University of Canterbury, Christchurch, New Zealand. May 9-12, 1989.
2. Hicks, B.B., **D.D. Baldocchi**, R.P. Hosker, B.A. Hutchison, R.T. McMillen, D.R. Matt and L. Satterfield. 1985. On the use of air concentrations to infer dry deposition. NOAA Technical Memorandum ERL ARL-141. 65 pp.
1. **Baldocchi, D.D.**, D.R. Matt, R.T. McMillen and B.A. Hutchison. 1985. Evapotranspiration over an oak-hickory forest. Proceedings of National Symposium on Advances in Evapotranspiration. American Society of Agricultural Engineers, St. Joseph, Mi. pp. 414-422.

RESEARCH PROJECTS

- Baldocchi, D.D.** (PI), Whendee Silver (co-I) Sherman Island Wetland Development and Delta-wide Applied GHG Research Project, California Department of Fish and Wildlife, Prime Sponsor; California Department of Water Resources, Sponsor, \$3,818,936, July 1, 2016- June 30, 2020
- Baldocchi, D.D.** AmeriFlux Management Program, Department of Energy. LBNL Contract Oct 2013-Sept 30, 2016, \$738,152
- Baldocchi, D.D.** Ameriflux Network Management Project, Department of Energy. LBNL Contract, Sept, 2017, \$62,434
- Dennis Baldocchi**, Margaret Torn, Deb Agarwal, Marty Humphrey. Connecting AmeriFlux to the Globe, Extending the Partnership with the Global Flux Network, FLUXNET. NASA ROSES, August 15, 2014-August 14, 2017, \$882,078
- Baldocchi, D.D.** AmeriFlux Management Program, Department of Energy. LBNL Contract Oct 2016-Sept 30, 2020, \$890,329

Past Funding

Torn, M, **Baldocchi, D.**, Biraud, S. Lawrence Berkeley National Laboratory
The AmeriFlux Network Management Project, U.S. Department of Energy, Biological and Environmental Research. Fy 2013-2016. \$15,000,000

- Baldocchi, D.D.** PI, Battles, J, co-I. Quantifying and Understanding Interannual Variability of Carbon, Water and Energy Exchange of an Oak Savanna and an Annual Grassland Ecosystem AmeriFlux Site. USDOE, Terrestrial Carbon Project, Sept 15, 2009-Sept 14, 2010. \$225,000.
- Baldocchi, DD.** Evaluation of Rice Cultivation in the Sacramento-San Joaquin Delta, DWR-Reclamation District #1601. Dec 1, 2009-Nov 30, 2010. \$79,996
- Baldocchi, D.D.** *Measuring and Modeling carbon, water vapor and energy exchange over grassland and tree/grass ecosystems.* California Agricultural Experiment Station, Oct. 1, 2009-Sept 30, 2010., \$0.
- Baldocchi, D.D.** PI, co-Is, Beverly Law, Robert Cook, Niall Hanan, Alex Knohl, Ray Leuning, Hank Margolis, Yoshikazu Ohtani, GuiRu Yu, Ricarndo Valentini Fluxnet, A global network of carbon, water, and energy flux measurement sites. National Science Foundation, Research Coordinated Networks. Feb. 2007 through Jan, 2012. \$500,000.
- Baldocchi, DD,** PI. Silver, W and Kelly, NM, co- Is. Understanding the Coupling of Greenhouse Gases (Methane, Carbon Dioxide, Water Vapor) and Energy Fluxes and Scaling them across a Spectrum of Time and Space over a Vulnerable Ecosystem and a Biological Hot Spot: the Sacramento-San Joaquin Delta Peatland. National Science Foundation. Sept 2006 through Sept 2010. \$1,291,162.
- Baldocchi, DD.,** Hunt, J., Agarwal, D. Carbon flux data analysis and collaboration Infrastructure. Microsoft. Joint project with LBL and Berkeley Water Center, award 20090312, Nov 2008 to Nov 2010, \$499,566,
- Baldocchi, D.D.** PI, Battles, J, co-I. Quantifying and Understanding Interannual Variability of Carbon, Water and Energy Exchange of an Oak Savanna and an Annual Grassland Ecosystem AmeriFlux Site. USDOE, Terrestrial Carbon Project, Sept 15, 2006-Sept 14, 2009. \$749, 954.
- Baldocchi, D.D.** *Measuring and Modelling carbon, water vapor and energy exchange over grassland and tree/grass savanna ecosystems, a renewal for two Ameriflux field sites.* US Department of Energy. Sept 15, 2003- Sept 14, 2006. \$783,425.
- Goldstein, A, Cheng, W and **Baldocchi, D.** *Controls of Canopy Photosynthetic Activity on Roots and Soil Carbon Dynamics in Ponderosa Pine and Oak/Savanna Ecosystems.* Kearney Soil Science Foundation. Jan 2004 through December 2006. \$360,000 (\$120,000 to ddb).
- Dawson, T and **Baldocchi, D.** *A Synergistic Approach of Using Fluxes, Isotopes and Models to Partition Plant and Soil Contributions to Ecosystem Exchange of CO₂ and H₂O.* National Science Foundation. August 15, 2003- July 31, 2006. \$550,000.
- Baldocchi, DD.** *Roles of temperature, rain events and plant functional type on carbon exchange of an oak-grass savanna ecosystem at two AmeriFlux sites in California.* Western Regional Center of National Institute for Global Environmental Change. WESTGEC. July 2003-June, 2006. \$100,000 per year.
- Baldocchi, Dennis,** Olson, RJ, Running, S, Hollinger, D, Valentini, R. Leuning, R. Yamamoto, S. *FLUXNET, A Global Network of Carbon, Water and Energy Flux Measurement Sites: A Continuation Proposal for the Project Science Office.* NASA, NRA-00-OES-08 for Carbon Cycle

Science and Related Opportunities In Biology and Biogeochemistry. Feb. 2002-Feb 2005.
\$760,636.

Baldocchi, DD. *Soil respiration and carbon sequestration of an oak-grass savanna in California: roles of temperature, soil moisture, rain events and photosynthesis* Kearney Soil Science Foundation, 2003-2004. \$70,000.

McDowell, N., Still, C., **Baldocchi, D.D.** Measuring and Modeling the Isotopic Composition of Biosphere-Atmosphere CO₂ Exchange. Campus Laboratory Collaboration Program. University of California Office of the President. Jan. 2005-Dec 2005. \$112,500 (\$0 to ddb, first year).

Fung, I, **Baldocchi, DD**, Berry, J, Denning, A.S., Doney, S.C., Field, C.B., Randerson. *Inferences of Regional Carbon Exchange Processes and their Variability Since 1980*. NASA, NRA-00-OES-08 for Carbon Cycle Science And Related Opportunities In Biology And Biogeochemistry Of Ecosystems And Applications. August, 2001 to August, 2004. \$945,075.

Olson, Richard J., Boden.T., Holliday, S, **Baldocchi, DD.**,Falge, E., Running, S, Hollinger, D., Valentini, R., Yamamoto, S. *FLUXNET: A Global Flux Database to Advance Carbon Cycle Science*. NASA, NRA-00-OES-08 for Carbon Cycle Science And Related Opportunities In Biology and Biogeochemistry Of Ecosystems And Applications. August, 2001 to August, 2004. (non-funded contribution).

Leclerc, M.Y, **Baldocchi, DD**. Running, S., Hollinger, D., Gholz, H., Binford, M., Hendry, G. *From tower to pixel: Integration of patch size NEE using experimental and modeling footprint analyses*. USDOE, Terrestrial Carbon Program. 2000-2003. \$97628.

Baldocchi, DD. *Measuring and modeling carbon, water vapor and energy exchange over grassland and tree/grass ecosystems*. US Department of Energy /Terrestrial Carbon Program. Sept, 2000 to Sept, 2003, \$680859.

Baldocchi, DD. Synder, R. *Surface renewal method for evaporation*, California Agricultural Experiment Station \$5k.

Baldocchi, D.D., S.W. Running, R.J. Olson, R. Valentini, D. Hollinger. *FLUXNET: Unifying a global array of tower flux networks for validating EOS Terrestrial carbon, water and energy budgets*. 05118 NASA Goddard Space Flight Center. July 1, 1999 to Dec 31, 2001. \$313,975.

Torn, M.S, **Baldocchi, DD.** *Atmospheric and Isotopic Measurements of Terrestrial Carbon Cycle*. US Department of Energy. \$100k August, 1999.

Baldocchi, DD. Evaluation Model Predictions of CO₂ and water vapor exchange with Flux measurements in a ponderosa pine forest. NASA Goddard Space Flight Center. NAG5-8510, \$85k July 1, 1999 to June 2, 2001.

Torn, M.S, **Baldocchi, DD.** *Atmospheric and Isotopic Measurements of Terrestrial Carbon Cycle*. US Department of Energy. \$100k August, 1999.

Davis, K, Denning, S., **Baldocchi, DD.** *Regional forest ABL coupling: Influence on CO₂ and Climate*. USDOE/TECO Program. \$12,000 contract to NOAA/ATDD, 1998-1999.

Baldocchi, DD. Hosker, RP. *Continuous monitoring of seasonal CO₂ and energy exchange over and within a mid-latitude deciduous forest: measurements and modeling.* U.S. Department of Energy. Terrestrial Carbon Program. FY 1995- 1999. \$1,162,000. EV03688-1005065-0002897.

Baldocchi, DD. Running, S. *Workshop on strategies for long-term studies of CO₂ and water vapor fluxes over terrestrial ecosystems.* FY 1998. USDOE, Terrestrial Carbon Program. \$30k.

Baldocchi, DD. Meyers, TP. *Experimental and Theoretical Studies on the Season, Annual and Inter-Annual Exchange of Water Vapor and Energy Exchange by a Temperate Forest Ecosystem in the Mississippi Basin.* NASA, GCIP. #H29552D. FY 98: \$129.1k, FY: 99, \$212k, FY00: \$219k.

Baldocchi, DD. Crawford, TL. *Experimental and modeling studies of water vapor, sensible heat and CO₂ exchange over and under a boreal forest.* NASA/NOAA BOREAS project. ~\$1.2M (1993-1996).

Baldocchi, DD. Valentini, R. *Workshop on strategies for long-term studies of CO₂ and water vapor fluxes over terrestrial ecosystems.* FY 1995. USDOE (\$20k), NASA (\$12k).

Lamb, B. **Baldocchi, D.** *Modeling isoprene emission rates from a forest canopy.* U.S.E.P.A. FY 95(\$30k), FY 96 (\$30k), FY97 (\$25k).

Lamb, B. **Baldocchi, DD.** *Modeling and field validation at biogenic hydrocarbon emissions.* U.S. E.P.A. DW13935388-010-0. FY 1992. \$49.6k.

Meyers, TP, **Baldocchi, DD.** *Improved parameterization of large-scale atmosphere/surface exchange of water vapor and heat in heterogeneous landscapes.* NOAA. FY 95, \$140k; FY 96, \$180k; FY 97, \$160k.

Hicks, BB, **Baldocchi, DD.** *The inferential method: development and standardization.* NAPAP project 2E-03e, Atmospheric Chemistry Task Group. NOAA, FY1987 to 1989, at \$382k per year.

Baldocchi, DD. *Canopy micrometeorology project.* U.S. Department of Energy. ~\$125k per year. FY 1988-1994.

PROFESSIONAL ACTIVITIES

Journals

Editor-in-Chief, Journal of Geophysical Research, Biogeosciences, 2009-2014

Senior Editor, ***Global Change Biology***. 1997 to 2009.

Editorial Review Board of ***Agricultural and Forest Meteorology***. 1993 to present.

Editorial Review Board of ***Plant, Cell and Environment***. 1995 to 2009.

Editorial Review Board of ***Boundary Layer Meteorology***. 1996 to 2009.

Faculty of 1000 Biology, Ecosystem Ecology Section, 2006 to 2009; 2015 to present.

Editorial Review Board of ***Tree Physiology***, 2007.

Editor, ***Tree Physiology***. 2003 to 2006.

Editor, ***Biogeosciences***. 2004.

Editorial Review Board of ***Tree Physiology***, 1987 to 1990, 2000, 2002.

Guest Editor, FLUXNET 2000 Special Issue of ***Agricultural and Forest Meteorology***. Vol 113. 2002.

Guest Editor, FLUXNET 2004 Special Issue of ***Global Change Biology***, volxx, 2007

Society Service

American Geophysical Union New Journal Feasibility Task Force. Jan-Apr, 2013.

Union Fellows Committee, American Geophysical Union, 2015 to present

Ad hoc referee for numerous journals.

University of California, Berkeley

Member, Berkeley Atmospheric Science Center, UC Berkeley.

Academic Senate, Committee on Educational Policy, 2011-2017

Member/Chair, College of Natural Resources, EXCOM, UC Berkeley, 2000, 2016-2018.

Member, College of Natural Resources, RESCOM, UC Berkeley, 2000-2002, 2008.

ESPM Graduate Advisor, July 2000-xxxx.

ESPM Graduate Admissions Committee, 2002-xxxx

ESPM Undergraduate Advisor in the Soil and Water Option of Resource Management, July, 2000 to present.

ESPM Workgroup, Graduate Programs, 2002.

Chair, BASC Fellowship Committee, 2003-xxxx.

ESPM Seminar Committee, Spring 2004.

Member, National Center for Hydrology Synthesis Working Group, 2004

Co-Chair, 4th Symposium of the Berkeley Atmospheric Science Center, 2004

College of Natural Resources, Dean's Council, 2004-2007.

Chair, Ecosystem Science Division, ESPM 2004-2007.

Departmental tenure ad hoc committee, 2005.

Member, Civil and Environmental Engineering, Surface Water Hydrology Faculty Search, 2008.

Campus ad hoc committee for tenure and promotion

Department ad hoc committee for promotion case

Universities of California

Natural Resources Program Planning Advisory Committee (PPAC), Division of Agriculture and Natural Resources (DANR), 2002-2005.

Professional Service:

a) National and International Committees

i. current

Biological and Environmental Research Advisory Committee (BERAC), US Department of Energy.

FLUXNET Science Coordinator.

AmeriFlux Science Steering Committee. 1997 to present.

AGU Union Fellows Committee.

Helmholtz ATMO Advisory Committee 2016-

ii. past

Leader, Fluxnet Project in International Land Ecosystem Atmosphere Process Study (ILEAPS). 2005-xxxx

AsiaFlux Advisory Committee 2000-xxxx
FLUXNET Canada, Science Advisory Panel. 2003- xxxpresent
Chair, CarboEurope Advisory Panel, ‘Assessment of the European Terrestrial Carbon Balance’ project.
2004 to xxxx.
The NSF/EOL Facilities Assessment, Surface Fluxes and Soils Subcommittee. 2006-xxxx
Ecohydrology Technical Committee, American Geophysical Union, 2006-xxxx
Scientific Advisory Board, Max Planck Institute of Biogeochemistry, Jena, 2007-present.
Scientific Advisory Board, Environmental Science Division, Oak Ridge National Laboratory, Oak Ridge,
TN, 2008-present
Science Steering Committee, FLUXNET 2007 Synthesis Workshop, La Thuile, Italy, Feb 19-22, 2007.
CarboEurope Advisory Panel, 2003.
Science Advisory Panel, WESTGEC, 1999, 2000.
Project Leader, Metabolic Diversity of Terrestrial Ecosystems, Diversitas/International Biodiversity
Observation Year (IBOY). 1999-2002.
Task Leader, Ecological controls on biosphere-atmosphere CO₂ and H₂O Fluxes, Global Change and
Terrestrial Ecosystems Project of the International Geosphere-Biosphere Program (GCTE/IGBP).
2001-present.
Ad hoc Science Advisory Group, International Satellite Land-Surface Climatology Project
(ISLSCP).2000.
National Technical Advisory Committee, National Institutes for Global Environmental Change (NIGEC).
1997 to 1999.
Boreal Ecosystem-Atmosphere Study (BOREAS) Project Executive Committee 1992-1996.
Science Panel. International Satellite Land-Surface Climatology Project (ISLSCP), 1994 to 2000.
Steering Committee. Trace Gas Monitoring Network (TRAGNET).
Science Steering Committee. IGBP/IGAC TRAGEX activity (Trace Gas Exchange between Mid-latitude
Terrestrial Ecosystems and Atmosphere). 1990.
ORNL DAAC User Working Group, 1997-1998.
American Meteorological Society (AMS) committee on Agriculture and Forest Meteorology. 1985 to
1988.
AMS committee on Biometeorology and Aerobiology. 1990 to 1993.

b) National and International Review Panels

University of Michigan Biological Station Review Team, chair, July, 2010
National Environmental Observatory Network (NEON), National Research Council. 2003.
NASA IDS Carbon Methane Review panel, June, 2003
Chair, External Review Committee, CarboEurope Program, Budapest Hungary March 4-8, 2002
NASA LBA Airborne Ecology Review panel, Feb. 2001
Review Panel, NOAA/NASA GCIP program, 1997.
NSF Terrestrial Ecology and Global Change Advisory Panel. June 1996.

c) Conference Organizer

Convenor, Berkeley FLUXNET 2017 Conference, Berkeley, CA, June 7-9, 2017
Convenor, “Berkeley FLUXNET-SPECNET Open Workshop”, Berkeley, CA, June, 2011.
Convenor, “Fluxnet Asilomar Modeling Workshop, Asilomar, CA, Feb 2009.
Co-Convenor. ‘Fluxnet Workshop, La Thuile, Italy, Feb 13-15, 2007.
Co-Convenor. ‘Fluxnet OpenWorkshop, Celebrating Ten Years Since La Thuile and Planning for the
Future’. Firenze, Italy, Dec 13-15, 2004.
Co-Convenor, Fall 2003, American Geophysical Union, “Estimating terrestrial carbon, water and energy
fluxes from site to region”. Dec. 2003.

Convenor, Fifth Fluxnet 2003 Synthesis Workshop, Lake Tahoe, CA. Aug., 2003.
Co-Convenor Fall 2002, American Geophysical Union, Session B05: "Water, Energy, and Carbon Exchange in Forest Systems
Co-Convenor, Fluxnet 2002 Synthesis Workshop, Orvieto, Italy, June 20-22, 2002.
Co Convenor, Session on: Water, Energy, and Carbon Cycles in Terrestrial Systems: Local-Scale Observations Through Fluxnet and Other Micrometeorological Tower Sites II, 2001 AGU Fall Meeting.
Convenor, Fluxnet 2000 Synthesis Workshop, Marshall, CA, June 2000.
Co-convenor, Second FLUXNET Workshop, Polson, MT, June 3-5, 1998.
Co-convenor, IGBP-BAHC Workshop on Strategies for Long Term Studies of CO₂ and Water Fluxes over Terrestrial Ecosystems. La Thuile, Italy. March 5-9, 1995.
Steering Committee, Workshop for Unaccounted Flux in Long-Term Studies of Carbon and Energy Exchanges. Boulder, CO. May 30-31, 2000.
Advisory Committee, International Workshop for Advanced Flux Network and Flux Evaluation. Sept 27-29, 2000, Hokkaido University, Japan.
Steering Committee for the Fifth International Conference on Precipitation Scavenging and Atmosphere-Surface Exchange Processes. Richland, WA. July 15-19, 1991.

Society Membership

American Meteorological Society
American Geophysical Union.
Foreign Member, Society of Agricultural Meteorology of Japan.

Instruction, UC Berkeley

ESPM 129, Biometeorology
ESPM 298/228, Advanced Topics in Biometeorology and Micrometeorology
ESPM 24, Atmosphere, Freshman Seminar, Spring 2001
ESPM 24, What is Environmental Sciences, Fall, 2011
ESPM 100es
ESPM 111, Ecosystem Ecology
ESPM 2, the Biosphere
ESPM 201b, Case Studies, Spring 2002-2003.
ESPM 299

International Shortcourses

Alpine Summer School, Land-Atmosphere Interactions, Valsavarenche, Italy, June 22-July 1, 2015. Eddy Covariance, a method for measuring ecosystem-atmosphere fluxes of trace gases.

Lessons from Flux Networks.

Spitzenforscherwerkstatt (Environmental Research Summit), Garmisch-Partinkirschen, July 17, 2014. (30 students and Postdocs discussing science careers with 3 leading scientists).

COST Action Training School on Flux Measurement Techniques of non-CO₂ Greenhouse Gases.
Mierzecin, Poland, May 7-12, 2013; 40 students from 20+ countries. 4.5 hours of lectures on greenhouse gas flux measurements (CH₄ and CO₂)

Colorado Summer Flux Course, 2008-2016. Niwot Ridge, CO. 24 students from 6+ countries 3 hour lecture and practical on Canopy Modeling and flux networks

Short course on Adaptive Management of Mediterranean Forest Ecosystems to Climate Change. CIHEAM-IAMZ, Zaragoza, Spain, May, 2010.

PhD. Shortcourse *Trends in plant ecophysiology and ecosystem ecology research* University of Palermo, Palermo, Italy. June 23-27, 2008. 11 lectures on Ecosystem Ecology. 70 students from 17 countries.

CarboEurope Summer School, Eddy Covariance Flux Measurements, Wepion, Belgium, July 18, 2006. Gave 4 hours of lectures on interpreting CO₂ flux measurements and on Modeling CO₂ exchange between vegetation and the atmosphere.

Advanced Topics in Biometeorology and Micrometeorology, University of Innsbruck, May, 2001

PhD Short Course on Carbon Dioxide and Methane Exchange between the Land Surface and the Atmosphere Institute of Geography, University of Copenhagen, Denmark. Nov 3-6, 1997. Lectured on trace gas fluxes and biosphere-atmosphere interactions.

Advanced Short Course on Biometeorology and Micrometeorology. Alghero, Sardegna. June 26-July 1, 1995. Lectured on trace gas fluxes and biosphere-atmosphere interactions. Taught course with R. Shaw, KT Paw U and R. Snyder of UC Davis.

Postdoctoral Fellows/Research Associates

Current:

Elke Eichelmann, University of Guelph (December, 2015

Siyun Ma, University of Toledo (May, 2004 to present).

Sam Chamberlain, Cornell, 2016

Amy Valach, Lancaster, 2015

Kuno Kasak, Tartu Estonia, 2017

Ana Andreu Mendez, Cordoba

Former Postdocs:

Housen Chu, University of Toledo, Jan, 2015-August, 2017

Patty Oikawa, PhD, Virginia

Cove Sturtevant, PhD, UC Davis

Martin Beland, PhD, University of Sherbrook, Ontario (Jan 2012 – July 2014)

Laurie Koteen, Ph.D. UC Berkeley. (Sept 2010-Jan 2014)

Naama Raz Yaseef. PhD Weizmann Institute, Israel (Nov. 2009 to 2013)

Matteo Detto, Ph.D. University of Milan (March 2007- 2010)

Hideki Kobayashi University of Tokyo (November 2008-2010)

Oliver Sonnentag, University of Toronto (-July, 2010), co-advised with Maggie Kelly

Rodrigo Vargas, UC Irvine (August 2007- August 2010)

Jorge Curiel Yuste, PhD. University of Antwerp, (Dec. 2004 to April, 2007).

James Dorsey, PhD Manchester University (Jan 2005 to October, 2006)

Alexander Knohl, Max Planck Biogeochemistry, University of Jena (May, 2004 to May, 2006). Prof. Univ Goettingen, Germany

Matthias Falk, PhD, University of California, Davis (Nov. 2002 to Feb. 2006). Univ California, Davis

Jianwu Tang, PhD, University of California, Berkeley (June 2003 to May, 2004). Marine Biological Laboratory, Woods Hole, MA

Liukang Xu, PhD, University of California, Davis (Feb. 2001 to April, 2004). Licor, Lincoln, NE

Lianhong Gu, PhD, University of Virginia (Feb. 2000 to July, 2002) (Associate Specialist); current employment, Environmental Science Division, Oak Ridge National Lab, Oak Ridge, TN.

Kell Wilson, PhD. Penn State University. May, 1997 to June 1999; current employment, Atmospheric Turbulence and Diffusion Division, Oak Ridge, TN).

Eva Falge, PhD Bayreuth University, June, 1998 to Oct. 1999; current employment, Research Associate, Bayreuth University.

Susanna Greco, PhD, University of Tuscia, 1993-1994

Chris Vogel, PhD, Georgia Tech, 1993-1994.

Graduate Students

Current:

Kyle Hemes, 2014

Completed Ph.D Students, Chair or Co-Chair:

Nancy Kiang, ESPM, "Savannas and seasonal drought: The landscape-leaf connection through optimal stomatal control", Ph. D. December, 2002.

Jianwu Tang, ESPM (co-advised with Ye Qi) "Soil carbon measurement and modeling in forest and savanna ecosystems of the Sierra Nevada: temporal variation, spatial variation and management impacts". Ph. D., May, 2003.

Josh Fisher, ESPM, Dissertation Co-chair (with Greg Biging), 'I. The land-atmosphere water flux across plant, ecosystem, global and social scales; II. GIS and spatial analysis for environmental justice and wildlife'. Ph.D., May 2006

Qi Chen, ESPM, Dissertation Co-Chair (with Peng Gong). 'Measuring vegetation structure and modeling ecological functions for a heterogeneous savanna ecosystem in California'

Gretchen Rose Miller, Civil and Environmental Engineering. May, 2009. Dissertation Co-Chair (with Yoram Rubin). Measuring and Modeling Interactions Between Groundwater, Soil Moisture, and Plant Transpiration in Natural and Agricultural Ecosystems. Ph.D., May 2007

Xingyuan Chen, Civil and Environmental Engineering, Dissertation Co-Chair (with Yoram Rubin). Study of Water Dynamics in the Soil-Plant-Atmospheric Continuum in a Water-Controlled Ecosystem. Ph.D. May, 2009

Youngryel Ryu. ESPM. Near-surface remote sensing of canopy architecture and land-atmosphere interactions in an oak savanna ecosystem. Ph.D. May, 2010

Jessica Osuna. ESPM. Drought tolerance in *Quercus douglasii* in the California Mediterranean savanna: A study of photosynthetic functional responses, limitations and changes during annual seasonal drought. Ph.D. May, 2011.

Jaclyn Hatala, ESPM. Spatio temporal dynamics of carbon dioxide and methane fluxes from agricultural and restored wetlands in the California Delta, Ph.D. May, 2013.

Eric Waller, ESPM, Complexity in Climatic Controls on Plant Species Distribution: Satellite Data Reveal Unique Climate for Giant Sequoia in the California Sierra Nevada, Ph.D. Fall, 2014.

Sara Knox, ESPM, Assessing the Impacts of Land Use Change and Ecological Restoration on CH₄ and CO₂ Fluxes in the Sacramento San Joaquin Delta, California: Findings from a Regional Network of Eddy Covariance Towers. Ph.D. Spring, 2016.

Graduate Committees UC Berkeley

Masters Thesis Reading Committee

Erin Conlisk, ERG. "Nitric Acid Dry Deposition" Fall 2003.

Nathan Brown. Epiphenomenal Architecture. Masters of Architecture. Summer, 2009.

Dissertations Reading Committees

Ming Xu, ESPM, 2000. Ecosystem carbon measurement, modeling, and management in a young ponderosa pine plantation in northern California.

Meredith Bauer Kurpius, ESPM, 2001. Ozone deposition to a Sierra Nevada, California ponderosa pine plantation.

Sergio Pacca, ERG, "Global Warming Effect Applied to Electricity Generation Technologies", Spring 2003.

Dylan Millet, ESPM. Dissertation Reading Committee. "Characterizing Emission Sources, Chemistry, and Lifetimes of VOCs and Particles using *In Situ* Measurements". Dec. 2003.

Maoyi Huang, CEE, Dissertation Reading Committee, May, 2005. "Surface and groundwater interactions and their impacts on regional water and energy budgets at the land surface", May 2005.

Anita Lee, ESPM, May, 2006. Dissertation Reading Committee 'Ecosystem Scale Fluxes of Total and Speciated Monoterpenes: Implications for Gas- and Particle-Phase Atmospheric Chemistry'

Delphine K Farmer, College of Chemistry, Fall 2006. Dissertation Reading Committee 'Biosphere-atmosphere exchange of reactive nitrogen oxides between the atmosphere and a pine forest.'

Alan DiVittorio, ESPM. Spring. 2008. 'A biochemical-spectral model for characterizing ozone damaged pine trees'.

Boniello, Ralph A., IV. ESPM, 'Fall, 2008. Variation in foliar structure and function within the crowns of conifers growing in the central Sierra Nevada, CA.'

Sonia Wharton. UC Davis, LAWR, Fall 2008. 'Stand Age- and Climate Variability-Effects on Ecosystem Exchange at the Wind River Experimental Forest, Washington, USA.'

John Kochendorfer UC Davis, LAWR, Fall 2008 'Bio-micrometeorological flux measurements over heterogeneous surfaces'.

Nicole Bouvier-Brown, ESPM, Fall 2008, 'Quantifying reactive biogenic volatile organic compounds: implications for gas- and particle- phase atmospheric chemistry'.

Katharine Tracy Schwartz. Physics, Fall 2008. 'Wind dispersion of CO₂ leaking from underground sequestration, and outlier detection in eddy covariance data using extreme value theory'

Laurie Koteen. Energy Resources Group. Summer, 2009. 'A comparison of carbon cycling between native perennial and non-native annual grass communities in northern coastal California'.

Anthony Ambrose. Integrative Biology. Fall, 2009. "Effects of climate and water stress on physiological performance in California's redwoods"

Kevin Simonin. Integrative Biology. Fall, 2009.

Ben Runkle, Civil Environmental Engineering, 'Plant Water Use and Growth in Response to Soil Salinity in Irrigated Agriculture'. Fall, 2009.

Jehan Rehani. Civil and Environmental Engineering. Isolating Effects of Water Table Dynamics, Terrain, and Soil Moisture Heterogeneity on the Atmospheric Boundary Layer Using Coupled Models, Fall, 2010.

Sarah Placella. ESPM. Spring. 2011. Gene Expression by Microbial Communities in Response to Soil Wet--Up: Microbial Resuscitation Strategies, Nitrifier Response Dynamics, and N₂O Pulses

Luis Maria Ibanez de Garayo. ESPM. Fall 2011. Extensions to Metadata Languages for Environmental Primary Data: the Forest Cloud.

Jeong-Hoo Park. ESPM, Fall, 2012. Quantifying the ecosystem-scale emission and deposition fluxes of biogenic volatile organic compounds (BVOC) and their oxidation products above plant canopies

Yunliang Zhao. ESPM, Fall, 2012. Insights into organic aerosol sources and chemistry: development and application of in-situ thermal desorption gas chromatograph for semi-volatile organic compounds (SV-TAG).

Cristina Poindexter, Wetland flow and interfacial gas exchange. Civil and Environmental Engineering. Spring, 2014.

Raj Singh, Hyper-Resolution Global Land Surface Model at Regional-to-Local Scales with observed Groundwater data assimilation. Geography Department, Spring 2014

Elizabeth Ohlsson, Capturing the Impact of Riverine Nutrient Delivery on Coastal Ocean Biogeochemistry, ESPM, Spring, 2014

Gabriel Isaacman

Abinav Guha

Adam Roddy

Gavin McNichol, Spring, 2016

Diane Taylor, Civil and Environmental Engineering, Spring, 2017

INVITED LECTURES: UNIVERSITY SEMINARS, CONFERENCES AND WORKSHOPS.

Keynote, Plenary, Distinguished Lecturer or Named Lecture Series

Role of flux networks in benchmarking land atmosphere models. Keynote Lecture 2016 International Land Benchmarking Workshop, Washington, D.C. May 17, 2016

Evaluating Evaporation Everywhere, All of the Time: Lessons Learned about Ecosystem Evaporation from Long Term Global Flux Networks. Environmental Science Seminar, MIT, May 5, 2016.

AmeriFlux's Role in Building Community Infrastructure: Observations, Data and Models. Plenary Lecture. Department of Energy. Environmental System Science Principal Investigator (PI) Meeting. Potomac, MD. April 26, 2016.

Using a Hierarchy of Modeling Approaches to Mine a Rich Dataset of Greenhouse Gas Fluxes Measurements: Experiences Derived from a Meso-network of Agricultural and Restored Wetland Sites in the Peat-Rich Delta of California. Plenary Lecture at International Soil Modeling Conference, Austin, TX March 29-30, 2016

Physics Wins, Biology is How it's Done: An Exploration of Ecosystem-Atmosphere Interactions. University of Hawaii, Geography Distinguished Lecture Series. April 2, 2015

I've seen plants from both sides now: ecosystem-atmosphere interactions. Karlsruhe Institute of Technology (KIT) 2014 Environment Lecture. Garmisch-Partenkirchen, Germany, July 16, 2014.

Evaluating Evaporation Everywhere, All of the Time: Lessons Learned about Ecosystem Evaporation from Long Term Global Flux networks. Keynote Lecture at International Symposium on Evapotranspiration: Challenges in Measurement and Modeling from Leaf to the Landscape Scale and Beyond, Raleigh, NC April 7, 2014

Can Planting Trees Offset Carbon Emissions? Science and Ecology of Carbon Offsets “Frontiers: The COAS Visiting Scholar Series”. College of Oceanic and Atmospheric Sciences, Oregon State University, June 4, 2010.

Why Ecologists need Soil Physics and Vice Versa, 7th annual Gaylon Campbell Lecture in Environmental Soil and Water Science, Washington State University, Pullman, Wa, February 16, 2010.

Breathing of the Biosphere: How Physics Sets the Limits and Biology Does the Work, 17th Keuhnast Lecture, University of Minnesota, St Paul. October 15, 2009.

Physics Wins, Biology is How It's Done: Biometeorology at Berkeley. UC Davis-Global Leader in Environmental Sciences Series: Integrating Biophysical Sciences with Ecology and Policy. January 21, 2009.

Lessons learned from a decade of flux measurements across a global network of regional flux towers. Keynote lecture. AsiaFlux Workshop, Seoul, Korea, Nov 17-19, 2008.

Using Biophysical Models and Eddy Covariance Measurements to Ask (and Answer) Questions About Biosphere-Atmosphere Interactions. Earth Sciences Division Distinguished Seminar Series, Lawrence Berkeley National Laboratory, Sept 5, 2008.

Role of Flux Networks in Biogeosciences. Fellows in Biogeosciences, American Geophysical Union, Acapulco, Mexico, May 22, 2007

Looking at Biosphere-Atmosphere Interactions Differently: Assessing Roles of Switches, Lags and Pulses on Carbon, Water and Energy Fluxes with Data from a Global Network – Fluxnet. University of Toronto, Centre for Global Change Science, Distinguished Lecturer Seminar Series. March 21, 2006

Looking at Biosphere-Atmosphere Interactions Differently: Assessing Roles of Switches, Lags and Pulses on Carbon, Water and Energy Fluxes with Data from a Global Network-Fluxnet. EnvironDay Keynote Lecture. University of Virginia, Dept of Environmental Science. Jan 17, 2006.

Modeling Carbon, Water and Energy Fluxes of Terrestrial Ecosystems: Using Lessons from Networks of Eddy Covariance Towers. NASA Goddard Scientific Colloquium. Greenbelt, MD, March 19, 2004.

Terrestrial Carbon Cycling: What, How, Why and Will? (Keynote Lecture.) First CarboEurope Integrated Project Meeting. Spoleto, Italy, Jan. 19-22, 2004.

Surface fluxes and their importance in the land-atmosphere system - a Fluxnet perspective (plenary talk). Integrated Land Ecosystem AtmosphereProcess Study (ILEAPS/IGBP) Open Science Meeting. Helsinki, Finland, Sept 29-Oct 3, 2003.

Keynote Lecture on *Influences of canopy complexity on carbon, water and energy flux*. Linking the Complexity of Forest Canopies to Ecosystem and Landscape Function: A traveling Workshop. IUFRO, Corvallis, Or. July 18, 2001.

Distinguished Ecologist Lectures at Colorado State University on:

Using a Network of Micrometeorological Flux Measurement Towers--FLUXNET--to Assess Ecosystem Scale Carbon Dioxide and Water Vapor Fluxes Across Multiple Time and Space Scales, April 4, 2001.

Using Micrometeorology to Address Ecological and Biogeochemical Questions: An Overview of Trace Gas Flux Measurement Methods and the Information They Produce, April 5, 2001.

Scaling Fluxes of Carbon Dioxide and Water Vapor From Leaf to Canopy Scales, April 6, 2001.

Turbulent transfer in a deciduous forest. Keynote Lecture. Proc. Fourth Australasian Conference on Heat and Mass Transfer. University of Canterbury, Christchurch, New Zealand. May 9-12, 1989.

Other Invited Lectures

Investigating the water-food-climate nexus, UNCHARTED Festival of Ideas, Berkeley, CA, Oct 2016

Evaluating Evaporation Everywhere, All of the Time: Lessons Learned about Ecosystem Evaporation from Long-Term, Global Flux Networks. Massachusetts Institute of Technology, Environmental Science Seminar, May 5, 2016.

Implications of the True Cost of Water on California Agriculture True Cost of American Food. San Francisco, CA, April 16, 2016

'What is Annual Ecosystem Photosynthesis? An Exploration of Data and Models from Ecosystem to Globe'. University of Montana, Systems Ecology Seminar Series, March 17, 2016.

Multifaceted Roles of Management on Land-Atmosphere Interactions. American Geophysical Union. San Francisco, Dec. 16, 2015.

Scaling Ecological Data to Reveal Emergent Scale Properties. Symposium on Scaling in Ecology: Building a Synthetic and Predictive Science for the Next 100 Years. Ecological Society of America, Baltimore, MD, Aug 13, 2015.

'What is Annual Ecosystem Photosynthesis? An Exploration of Data and Models from Ecosystem to Globe' at the 4th Carbon Assimilation Workshop at the University of Toronto. May, 2015

Physics Wins, Biology is How it's Done: An Exploration of Ecosystem-Atmosphere Interactions. Department of Earth and Planetary Science. Weizmann Institute, Rehovot, Israel. April 19, 2015

Greenhouse Gas Flux Measurements over the Sacramento-San Joaquin Delta Uppsala University, March, 2015.

Greenhouse Gas Flux Measurements over the Sacramento-San Joaquin Delta Stockholm University, March, 2015

- Eddy Covariance, a Method for Measure Trace Gas Fluxes*. Association for the Science of Limnology and Oceanography, Granada, Spain, Feb, 26, 2015
- Greenhouse Gas Flux Measurements over the Sacramento-San Joaquin Delta*. Wageningen University, Jan, 2015
- Lessons Learned from a Global Network of Flux Towers* Wageningen University, Jan. 2015
- Lessons Learned from a Global Network of Flux Towers*. Vrije University, Amsterdam, Jan, 2015
- Bridging soil physics and ecosystem ecology towards better understanding soil trace gas efflux*. Complex Soil Systems Conference. "A Path to Improved Understanding of Complex Soil Systems." Berkeley, California. Sept 3-5, 2014.
- Roles of weather, land use, and management on greenhouse gas flux measurements in the Sacramento Delta*. AsiaFlux. Los Banos, Philippines, August 20-23, 2014
- Exploring Methane and Carbon Dioxide Exchange from Agricultural and Wetland Land Use in the Sacramento-San Joaquin Delta*. Delta Stewardship Council Brown Bag Seminar, April 29, 2014, Sacramento, CA
- Exploring methane and carbon dioxide exchange from agricultural and wetland land use classes in the Sacramento-San Joaquin Peatland Delta of California*, Royal Society International Seminar on 'Scaling methods for greenhouse gas fluxes in British lowland peatland', Chicheley Hall, Dec 10-11, 2013
- Shaking hands between eddy fluxes and Remote Sensing*. COST Action ES0903 Eurospec final Conference, Trento, IT Nov. 6-8, 2013
- What is Annual Ecosystem Photosynthesis?: An Exploration of Data and Models from Ecosystem to Globe*. Berkeley Atmospheric Science Center Seminar, Oct. 15, 2013.
- Assessing Photosynthesis from Canopy to Global Scales*. Symposium of Photosynthesis at Larger Scales. 16th International Conference on Photosynthesis. St Louis, Mo August, 2013.
- Evaluating evaporation everywhere, all of the time: Lessons learned about ecosystem evaporation from long-term, global flux networks*. School of the Environment, Spring Speakers Seminar Series, Portland State University. May 23, 2013
- Ecology and Soil Moisture: Using an Oak-Grass Savanna as a Model System for Studying the Effects of Soil Moisture Dynamics on Water and Carbon Exchange*. COSMOS Workshop, Tucson, AZ Dec 10-11, 2012
- Accumulated Winter Chill is Decreasing in Fruit Growing Regions of California*, California Climate Change Consortium, California Department of Food and Agriculture. Modesto, CA, Nov 29, 2012.
- On eddy covariance measurements of methane fluxes across a catena of land use types (drained peatland pastures, rice and restored wetlands) in the Sacramento-San Joaquin Delta*. Workshop on The

importance of land-atmosphere fluxes of methane and nitrous oxide for the global greenhouse gas balance—the need for a fluxnet-GHG. Hyytiala, Finland, Sept 4-7, 2012.

Summing hydrocarbon (C₅H₈ and CH₄) emissions on annual time scales with models and measurements. Gordon conference on Biogenic Hydrocarbons and the Atmosphere, Bates College, Lewiston, ME. June 25-29, 2012.

Biosphere-Atmosphere Interactions: Issues, Observations and Technology. Lower Atmospheric Observing Facilities Workshop. Meeting the Challenges of Climate System Science., Boulder CO USA, 18-19 June 2012

On eddy covariance measurements of methane flux across a catena of land use types (drained peatland pasture, rice and restored wetland) in the Sacramento-San Joaquin Delta. 30th Conference on Agricultural and Forest Meteorology. Boston, MA. May 29-June 1.

Measuring and Interpreting Fluxes of Trace Gases Across Local and Global Networks: A Nexus between Biometeorology and Engineering. Spring 2012, Research Exchange Seminar Series. Center for Information Technology Research in the Interest of Society, CITRIS. UC Berkeley. April 25, 2012.

Trials and Tribulations of Measuring Greenhouse Gas Fluxes over Drained Peatland, Rice and Restored Wetlands. Max Planck Institute of Biogeochemistry, Jena, Germany. Jan. 30, 2012.

Computing Carbon Dioxide and Water Vapor Fluxes Everywhere, All of the Time. Fall Meeting of the American Geophysical Union, San Francisco, CA. Dec 9, 2011.

Trials and Tribulations of Measuring Methane Fluxes. Plenary Talk. 7th Brazilian Workshop on Micrometeorology, Santa Maria, Rio Grande do Sul, Brasil, Nov 16-17, 2011.

FLUXNET. BrasFlux Workshop, Santa Maria, Rio Grande do Sul, Brasil, Nov 16-17, 2011

Scaling information on the breathing of the biosphere from chloroplast to globe. Terrestrial Biogeosciences Group, Boston University. Oct 28, 2011

Trials and Tribulations in Measuring Methane Fluxes from Drained Peatlands in the Sacramento-San Joaquin Delta. USGS Western Colloquium. Menlo Park, CA. May 9, 2011.

The Ecology and Physics of Mining Carbon Dioxide from the Atmosphere. Physiological and Molecular Plant Biology Noon Seminar, University of Illinois, Champaign-Urbana, IL. February 23, 2011.

Trials and Tribulations of Measuring Methane Fluxes in the Sacramento-San Joaquin Delta. Ecosystem Sciences Division, Department of Environmental Science, Policy and Management. University of California, Berkeley. February 16, 2011.

Extracting Information on Rain-Induced Pulses of Ecosystem Respiration across Scales Spanning the Plot, Canopy and Planetary Boundary Layer. American Geophysical Union, Dec. 2010.

Evaporation in Vineyards. Napa Valley 2010 Vintage Report Workshop. St. Helena, CA. Nov 30, 2010

- Lessons Learned about Ecosystem Evaporation from Long-term, Global Flux Networks.* LATSIS Ecohydrology Symposium 2010, Lausanne, Switzerland, Oct 17-20, 2010
- Biosphere Breathing' from Chloroplast to the Globe.* Microsoft E-Science, Berkeley, CA, Oct 11-13, 2010.
- Micrometeorological Methods Used to Measure Greenhouse Gas Fluxes: The Challenges Associated with Them, at the Local to Global Scales.* JASON 2010 Summer Study on Carbon Treaty Verification, La Jolla, CA. June 18, 2010.
- Trials and Tribulations of Measuring Methane and Greenhouse Gases with Eddy Covariance.* Atmospheric Science Seminar, College of Oceanic and Atmospheric Sciences, Oregon State University, June 3, 2010.
- Micrometeorological methods to measure greenhouse gas fluxes and associated challenges at the local to global scales,* Workshop on Advanced Greenhouse Gas Quantification Methods. National Institute of Standards and Technology, Gaithersburg, MD, Mar 24, 2010.
- The Physics and Ecology of Carbon Offsets,* Environmental Systems Group Graduate Seminar, University of California, Merced, Feb 24, 2010.
- Pie in the Sky Biogeosciences: Do we have to consider the effects of Disturbance on Carbon Fluxes, too?* American Geophysical Union Annual Fall Meeting, San Francisco, CA. Dec 17, 2009.
- Carbon Cycle at Global, Regional and Ecosystem Scales* Forest Inventory Symposium, Air Resources Board, Sacramento, October 19, 2009
- Carbon and Water Exchange of an Oak-Grass Savanna Ecosystem.* Forest Inventory Symposium, Air Resources Board, Sacramento, October 19, 2009
- Energy , Carbon and Water Budgets in Oak Woodlands.* Integrated Hardwood Range Management Program Workgroup Annual Meeting. Blodgett, Georgetown, CA. May 20, 2009
- Carbon and water exchange of California rangelands: an oak savanna, annual grassland and peatland pasture.* Cal-Pac Society for Range Management. Santa Rosa, CA. May 14, 2009
- Carbon & Water Exchange of an Oak-Grass Savanna and Peatland Pasture Ecosystem.* Range RoundTable, University of California, Berkeley, March 20, 2009.
- On the differential advantages of evergreenness and deciduousness of Mediterranean oak, a flux perspective.* ESPM Forestry Seminar. Dec. 4, 2008
- Using a global network-FLUXNET- to study the breathing of the biosphere.* Faculty of Engineering, University of Palermo, Palermo, Italy. June, 25, 2008.
- Using a global network-FLUXNET- to study the breathing of the biosphere.* Department of Forest Science and Environment (DISAFRI), University of Tuscia, Viterbo, Italy. June, 20, 2008.
- The Ecology and Science of Carbon Offsets by Forests.* Energy Bioscience Institute Workshop on Greenhouse Gas Emissions from Biofuels, University of California, Berkeley. June 9, 2008

Using a global network-FLUXNET- to study the breathing of the biosphere. Civil and Environmental Engineering Department, Princeton University, April 14, 2008.

Measuring and modeling energy exchange of a woodland and grassland: a case for landscape modification. NCEAS Workshop on 'Linking carbon storage in terrestrial ecosystems with other climate forcing agents: a synthesis allowing for effective carbon dioxide stabilization policies. Santa Barbara, CA, Jan 22-24, 2008.

Using a Global Network-FLUXNET- to Study the Breathing of the Biosphere. Centre de Recerca Ecologia I Applications Forestals, Universitat Autònoma Barcelona. Oct. 25, 2007.

Micrometeorology and Greenhouse gas exchange. Expert Workshop on the Relevance of Surface and Boundary Layer Processes for the Exchanges of Reactive- and Greenhouse Gases", Wageningen, Netherlands. 9-12th, October 2007

Physical and Biological Processes that Controls Water Vapor Exchange between Vegetation and the Atmosphere. Continental Biosphere: Vegetation and Water Cycle: Analysis and Perspective Paris, France. August 27-30, 2007.

Global Change and Agriculture: The Effects that Plants Have on Climate, and Vice Versa. Hearing on Agriculture's perspective on Climate change: Mitigation and Adaptation. California State Food and Agricultural Board, Sacramento, CA, July 25, 2007

Science and Ecology of Carbon Offsets: Can Carbon Indulgences Mitigate Global Warming? Max Planck Institute for Biogeochemistry, Jena, Germany, May 10, 2007

Using a Global Flux Network to Study the Breathing of the Terrestrial Biosphere Department of Earth Systems Science, UC Irvine, May 3, 2007.

Scientific and Ecological Issues with Carbon Trading. 2007 Natural Resources Coordinating Conference. Monterey, CA March 15.

FLUXNET at LaThuile, 2007: Synthesizing CO₂ and Water Vapor Fluxes From Across a Global Network. FLUXNET Synthesis Workshop 2007, La Thuile, Italy, Feb 19, 2007.

Phenology and CO₂ Exchange of Ecosystems. Annual Meeting of American Geophysical Union, Dec 16, 2006, San Francisco.

Separation of autotrophic and heterotrophic respiration and their link to canopy photosynthesis. Open Science Conference on the Greenhouse Gas Cycle in the Northern Hemisphere. Sissi-Lassithi, Crete, Nov 14-18, 2006.

Climate Change and Agriculture: Trends and Bi-Directional Impacts. 3rd Annual Climate Change Research Conference, Sacramento, CA Sept 14, 2006.

Lessons learned from a global network of flux measurements sites-FLUXNET. Indo-US Workshop on IndoFlux, Chennai, India, July 12-16, 2006

Where to Tan and Buy Beach Property: An Overview on Global Warming. Defend Science Forum. University of California, Berkeley, April 13, 2006.

Carbon, Water and Energy Exchange of an Oak-Savanna Ecosystem. Natural Resource Coordinating Conference, University of California Berkeley, March 14, 2006

The roles of switches, pulses, and lags on the dynamics of biosphere-atmosphere trace gas exchange. University of California, Berkeley, ESPM seminar, Sept 19, 2005.

An Italo-Californian Perspective on Ecohydrology. 3rd CNR (Italy)-Princeton Workshop on New Frontiers in Hydrology. Princeton, NJ. May 18, 2005.

FLUXNET after 10 Years: Synthesizing CO₂ and Water Vapor Fluxes From Across a Global Network. Department of Land, Air and Water Resources, University of California, Davis, April 19, 2005.

The Dynamics of Biosphere-Atmosphere Trace Gas Exchange: The Roles of Switches, Pulses, and Lags. Dept of Ecology, Evolution and Natural Resources, Rutgers University, New Brunswick, NJ, April 7, 2005.

Water and Savanna Rangelands: Today and Tomorrow. Rangeland Water Quality Conference. Woodland, Ca. Feb 23-24, 2005.

FLUXNET, Successes, Failures and the Future. FLUXNET Open Meeting. Firenze, Italy, Dec. 13-15, 2004.

Assessing energy balance closure with eddy covariance and remote sensing measurements and energy balance and flux footprint models. Symposium-Progress in radiation and energy balance measurement systems. 96th Annual Meeting of the American Society Agronomy. Nov. 2, 2004.

Geographic variations in climate & vegetation and their effects on NEE, GPP & Re: A Framework for Understanding Inter-annual Variability in NEE. Annual AmeriFlux Workshop. Oct 4-6, 2004. Boulder, CO.

Ecosystem-Atmosphere Exchange: Lessons learned from Biophysical Modeling and a global Network of eddy flux towers Earth Science Division, Lawrence Livermore National Laboratory, July 30, 2004.

Climate, Water & Vegetation in California: Today and Tomorrow. Natural Resource Coordinating Conference on Water Resources and the Hydrological Cycle in California: ANR's Research and Extension Program Opportunities. Redding, CA, April 28-30, 2004.

International Fluxnet: Synthesizing Information Across a Global Flux Network. FLUXNET-Canada 2004 Annual Meeting, Feb 27-29, 2004. Banff, Calgary.

The Dynamics of Biosphere-Atmosphere Trace Gas Exchange: The Roles of Switches, Pulses, and Lags. Department of Land, Air and Water Resources, University of California, Davis, Dec. 17, 2003.

How to Scale and Integrate Carbon Fluxes. FLUXNET 2003 Tahoe Synthesis Workshop. August 12-14, 2003.

Upscaling Tower Flux Measurements to the MODIS 1 km Grid Scale using Flux Footprint Models and Remote Sensing Information. 3rd INTAS Workshop on Flux and Concentration Footprints. Juupakoki, Finland. May 26-28, 2003.

- The Carbon Balance of the Temperate and Mediterranean Forest Biomes*. Symposium on The Carbon Balance of Forest Biomes, Society of Experimental Botany Meeting, Southampton, England, April 1-4, 2003.
- UpScaling Eddy Covariance Carbon Flux Measurements and DownScaling Continental-Scale Estimates of Biosphere Carbon Exchange: Can We Meet in the Middle?* March 20, 2003. CarboEurope Conference, Lisbon, Portugal.
- Measuring and Modeling Water & Carbon Exchange of an Oak-Grass Savanna Ecosystem*. Landscape and Biogeochemistry Seminar Series. University of California, Riverside, March 5, 2003.
- Measuring and Modeling Water & Energy Exchange of Ecosystems: Case Studies on an Oak Savanna, a Grazed Grassland and a Global Network of Field Sites, FLUXNET*. Civil and Environmental Engineering Seminar Series. University of California, Berkeley. Sept. 6, 2002.
- Leaves, canopies and atmosphere interactions: using biophysical models to investigate how plant canopies respond to environmental change*. Symposium on Plant Responses to Global Climate Change. Annual Meeting of American Society of Plant Biologists. August 4, 2002. Denver, CO.
- Partitioning Carbon and Water Fluxes with Understorey Eddy Covariance Flux Measurements*. FLUXNET 2002 Synthesis Workshop, Orvieto, Italy, June 20-22, 2002.
- Functional Significance of Diversity: Latent and Sensible Heat Exchange*. LINKECOL Workshop on The Functional Significance of Forest Diversity. June 13-15, 2002, Weimar, Germany.
- Interpreting Stable Carbon Isotope Fluxes and Concentrations in a Deciduous Forest with a Biophysical Model*. GTCE/BASIN Workshop on Biological controls on the stable isotope composition of atmospheric carbon dioxide, methane and nitrous oxide: process and applications, Banff, Alberta, Canada, May 12-14 2002.
- "Is a Forest the Sum of Its Parts?: Integrating Fluxes of Carbon Dioxide and Water Vapor From Leaf to Canopy Dimensions across Hour to Decadal Time Scales"*. ESPM Seminar, University of California, Berkeley. Feb 25, 2002.
- Scaling fluxes of carbon, water and energy from leaves to canopy dimensions*. AsiaFlux workshop. Jeju Island, Korea, Jan 9, 2002
- Fluxnet, a new tool to study the temporal and spatial variability of ecosystem-scale carbon dioxide, water vapor and energy flux densities*. Atmospheric Science Program. Department of Land, Air And Water Resources University of California, Davis. Nov. 6, 2001.
- FLUXNET, A global network of long term carbon dioxide, water vapor and energy measurement towers*. University of Utah, Department of Biology. June 10, 2001.
- FLUXNET, A global network of long term carbon dioxide, water vapor and energy measurement towers*. University of Innsbruck, May, 2001
- Scaling fluxes of carbon, water and energy from leaves to canopy dimensions: adventures in the field and on the computer*. CEA-CREST 2nd Annual Regional Environmental Science Conference. California State University. Los Angeles. May 4, 2001.

FLUXNET, A global network of long term carbon dioxide, water vapor and energy measurement towers, Indiana University. Environmental Science Seminar, School of Public and Environmental Affairs. March 8, 2001.

FLUXNET Overview. CarboEurope Workshop Hyytiala Finland. Jan, 2001.

Using Fourier Analysis to Examine Long-Term Measurements of CO₂ and Water Vapor Exchange of a Temperate Forest. Hydrology Section, American Geophysical Union, San Francisco, Dec. 2000.

Where to Tan and Buy Beach Property: An Overview of Climate Change and Its Impact on the Biosphere. Wildlife & Conservation Biology Seminar. UC Berkeley. November, 2, 2000.

Using Lagrangian Stochastic models to address environmental problems. Math Seminar, LBL, August, 2000.

BIOCOMPLEXITY: Carbon, Water and Energy Exchange of Ecosystems—The Roles of Non-Linear Biotic and Abiotic Forcings across a Spectrum of Time and Space Scales. Carnegie Institution of Washington, Stanford, CA. April 25, 2000.

On Evaporation Since Bill Pruitt'. Land Air and Water Resources Seminar, University of California, Davis, Nov 2, 1999.

Modeling and Measuring CO₂ exchange over a Deciduous Forest in Undulating Terrain. (Keynote Presentation). Workshop on Nighttime Carbon Exchange, Local Divergence and Drainage Flow at Experimental Sites with Small Scale Topography. University of Indiana, Bloomington, IN, April 29-May 1, 1999.

Flux Measurements and Flux Networks. Workshop on Northern Hemisphere Sink. Princeton University, March 2-3, 1999.

On interpreting micrometeorological measurements of trace gases and energy flux densities over and within vegetation. Symposium on Transfer Processes in the Natural Environment. Canberra, Australia. August 25-27, 1998.

*On Measuring Carbon Dioxide Fluxes over Complex Terrain*_FLUXNET Workshop. Polson, MT, June, 3-5, 1998.

FLUXNET Overview. ISLSCP/BAHC Workshop, Paris, France, April 28-30, 1998.

On Using Eco-Physiological, Micrometeorological and Biogeochemical Theory to Evaluate Trace Gas Fluxes Between the Biosphere and Atmosphere. University of California, Berkeley, April 6-7, 1998.

Eddy covariance measurements and long-term flux networks. GTCE/BASIN (Biosphere Atmosphere Stable Isotope Network) Workshop. Snowbird, UT. Dec. 7-10, 1997.

Experimental and theoretical studies of seasonal, annual and interannual exchange of carbon dioxide and energy by a temperate forest ecosystem. International Workshop on Comparative Studies on CO₂ fluxes Observed by Towers at Several Forest Stands in the World. Hiroshima, Japan. Sept. 16-17, 1997.

- Scaling isoprene fluxes from leaves to canopies: test cases over a boreal aspen and a mixed temperate forest.* Workshop on Biogenic Hydrocarbons in the Atmospheric Boundary Layer. Charlottesville, VA. August 24-27, 1997.
- On Using Eco-Physiological, Micrometeorological and Biogeochemical Theory to Evaluate Carbon Dioxide and Water Vapor Fluxes Over Vegetation,* Symposium on Integration of Ecosystem Simulation Modeling in Large Scale Field Experiments of Biosphere Atmosphere Exchange, American Geophysical Union. May 27, 1997, Baltimore, MD
- Modelling and Measuring Biosphere-Atmosphere Trace Gas Fluxes.* Nicholas School of the Environment, Duke University, April 18, 1997.
- Climate and vegetation controls on boreal energy exchange.* Workshop on Arctic Boreal Processes that Feed back to Climate: Extrapolation and Synthesis. Santa Barbara, CA. April 6-9, 1997.
- Modelling and Measuring Biosphere-Atmosphere Trace Gas Fluxes.* Botany Department, University of Texas, Feb. 27, 1997.
- Measuring and modelling carbon dioxide and trace gas fluxes over a temperate deciduous forest.* INRA, Nancy, France. Nov. 9, 1996.
- Modelling and Measuring Biosphere-Atmosphere Trace Gas Fluxes.* NCAR Summer Colloquium on Terrestrial Ecosystems and the Atmosphere. Boulder, CO. July 22, 1996
- Scaling fluxes of trace gases from leaves to canopies.* Seminar at Department of Environmental Science. University of Virginia, Charlottesville, VA. April 30, 1996.
- Biosphere-Atmosphere Exchange.* Workshop on Atmospheric Deposition and Surface Exchange. Roskilde, Denmark, April 11-12, 1996.
- Measuring and modelling trace gas fluxes between the atmosphere and biosphere.* Washington State University, Pullman, WA. Feb. 12, 1996.
- Integrating trace gas and energy fluxes from the leaf to canopy scales: the roles of physics, biology and physiological ecology.* 12th Conference on Biometeorology and Aerobiology. American Meteorological Society. Atlanta, GA. January, 1996.
- Measuring and modelling carbon dioxide and trace gas fluxes over a temperate deciduous forest.* NIGEC Seminar Series, Harvard University, Cambridge, MA, Dec. 7, 1995.
- Trace gas fluxes between the biosphere and atmosphere: using mechanistic leaf to canopy integration models to understand links among the carbon, water and nitrogen cycles.* 10th Annual U.S. Forest Service Workshop. NCAR, Boulder, CO, Nov. 8-19, 1995.
- Scaling carbon dioxide and water vapor exchange from leaf to canopy in a deciduous forest: model testing and application.* Workshop on Control of Photosynthesis in Tree Species. Bordeaux, France. August 27-29, 1995.
- On Modeling Dry Deposition.* WCRP Workshop on Modelling the Transport and Scavenging of Trace Constituents by Clouds in Global Atmospheric Models. Cambridge, UK August 1-4, 1995.

- Seasonal variations of CO₂ and water vapor exchange rates over a temperate deciduous forest.* IGBP/BAHC Workshop on Strategies for Monitoring Carbon Dioxide and Water Vapor Exchange over Terrestrial Ecosystems. La Thuile, Italy. March 5-9, 1995.
- Flux measurements.* ISLSCP/GCIP Workshop. Boulder, CO. Nov. 2, 1994.
- The role of physics, biology and chemistry on trace gas exchange by vegetation.* Society of Environmental Toxicology and Chemistry. Denver, CO. Nov. 1, 1994.
- The fluxes and air chemistry of isoprene above a deciduous hardwood forest.* Discussion Meeting on Trace Gas Exchange between Vegetation and the Atmosphere. Royal Society London, July 1994.
- The role of enhanced CO₂ on energy and CO₂ flux densities over a broadleaf forest canopy.* American Geophysical Union. Session on Climatic effects on trace gas fluxes between the biosphere and atmosphere. San Francisco. Dec. 5-10, 1993.
- Mass and Energy Exchange over Wheat and Corn.* University of Bologna, January, 12, 1993.
- Deposition of gaseous sulfur compounds to vegetation.* Workshop on Sulfur Nutrition and Assimilation in Higher Plants: Physiological Functions and Environmental Significances. Garmisch-Partenkirchen, Germany, April. 21-25, 1992.
- Basics of Micrometeorological Flux Measurements.* Flathead Lake Boreal Forest Modelling Workshop. Flathead Lake, MT August 18-24, 1991.
- Scaling Water Vapor and Carbon Dioxide Exchange From Leaves to a Canopy.* Carnegie Institution of Washington/Stanford University Seminar Series on Plant Biology. April 16, 1991. Stanford, CA.
- Scaling Water Vapor and Carbon Dioxide Exchange From Leaves to a Canopy: Rules and Tools.* Workshop on Scaling Processes between Leaf and Landscape Levels. Dec. 2 to 5, 1990. Snowbird, UT.
- The Control of Humidity in a Plant Canopy: A Micrometeorologist's Perspective.* Symposium on 'Canopy effects on humidity in the plant environment. Plant Growth Regulator Society of America. Aug. 6, 1990. St. Paul, MN.
- Canopy Control of Trace Gas Exchange.* Workshop on Environmental and Metabolic Control of Trace Gas Emission by Plants. Asilomar, CA. January 22-24, 1990.
- Turbulent transfer in orchards: effects of regular arrays.* Workshop on Micrometeorology of Non-Forest Trees. Plant Physiology Division, DSIR. Palmerston North, New Zealand. May 17 to 19, 1989.
- Scaling stomatal conductance: can we separate the trees from the forest?* Workshop on modeling plant and stomatal resistances. Pennsylvania State University. April 10-13, 1989.
- Linking free air and flux approaches.* SCOPE Workshop on Large Scale CO₂ Enrichment Experiments. Jan. 1989. Washington, D.C.
- Processes promoting exchange between the surface and the atmosphere.* Symposium on the exchange of contaminants across the atmosphere/surface interface in agriculture. American Chemical Society. 196th meeting. Los Angeles, Ca. Sept. 1988.

Canopy-atmosphere water vapor exchange: can we scale from a leaf to a canopy. Workshop on "Areal Estimation of Evapotranspiration", International Association of Hydrological Sciences, 19th Assembly of the International Union of Geodesy and Geophysics. August, 1987, Vancouver, B.C. Canada.