

# Christoph K. Thomas

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Professor, Micrometeorology

Head of the Micrometeorology Group

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## CONTACT

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## EDUCATION

**Ph.D. (Dr. rer. nat.)** in Micrometeorology, University of Bayreuth, June 2005, *summa cum laude*

**M.S. (Dipl. Geoeckol.)** in Geoeology (Environmental Sciences), University of Bayreuth, December 2001, *passed with distinction*

## PROFESSIONAL EXPERIENCE

### **Teaching and Research Faculty**

Full Professor in Micrometeorology, Faculty of Biology, Chemistry, and Geosciences, University of Bayreuth, Bayreuth, Germany, *October 2014 – present*

Courtesy Faculty, College of Earth, Ocean and Atmospheric Sciences, Oregon State University, Corvallis, OR, United States of America, *September 2014 – present*

Associate Professor in Physics of Oceans and Atmospheres, College of Earth, Ocean and Atmospheric Sciences, Oregon State University, Corvallis, OR, United States of America, *July 2014 – August 2014*

Assistant Professor in Atmospheric Sciences, College of Oceanic and Atmospheric Sciences, Oregon State University, Corvallis, OR, United States of America, *October 2008 – June 2014*

Adjunct Professor in Forest Ecosystems & Society, College of Forestry, Oregon State University, Corvallis, OR, United States of America, *February 2009 – August 2014*

### **Associate Editor**

Agricultural and Forest Meteorology, Impact factor 3.8; *April 2015 – August 2019*

Water Resources Research, American Geophysical Union, Impact factor 2.96; *November 2011 – 2015*

### **Editorial Board Member**

Agricultural and Forest Meteorology, Impact factor 3.8; *June 2008 – August 2019*

### **Scientific Advisory Board Member**

DFG (German Research Foundation) Grants committee for the Collaborative Research Centers (CRC, SFB), *July 2023 - present*

National Ecological Observatory Network (NEON), Fundamental Instrument Unit Working Group (FIU-WG), *June 2011 – October 2014*

**Other leadership**

Member of the Executive Committee of the Long Term Ecological Research (LTER) Site HJ Andrews Experimental forest, *November 2012 – August 2014*

**Postdoctoral Research**

Research Associate in workgroup of Prof. B. Law, Department of Forest Science, Oregon State University, Corvallis, OR, United States of America *September 2006 – September 2008*

Research Associate in the AmeriFlux QA/QC group, Prof. B. Law and Dr. H. Loescher, Department of Forest Science, Oregon State University, Corvallis, OR, United States of America, *April 2005 – September 2006*

**Doctoral Research**

Research Fellow, Department of Micrometeorology/ Climatology, Institute of Terrestrial Ecosystem Research Bayreuth (BITÖK), University of Bayreuth, Germany, *January 2002 – April 2005*

**Graduate Research**

Department of Micrometeorology, University of Bayreuth, Germany, *March – December 2001*

Department of Hydrology and Meteorology, Limnological Institute, Siberian Branch of the Russian Academy of Science, Irkutsk, Russian Federation, *September 1999 – November 2000*

**PROFESSIONAL AWARDS**

European Research Council (ERC) Consolidator Award, Projekt DarkMix, European Union: Horizon 2020; 2017 - 2023

Career Award in Dynamical & Physical Meteorology, National Science Foundation, USA; 2010

**THIRD-PARTY FUNDING AWARDS**

*In Germany at the University of Bayreuth (October 2014 – present):*

Share Thomas 5.9 Mill. Euro

„Beobachtung und Untersuchung des Systems Land-Atmosphäre, der planetaren Grenzschicht und von Flüssen“ (Observing and investigating the land-atmosphere system, the planetary boundary-layer, and fluxes), Project P1, Research Unit Land-Atmosphere Feedback Initiative (LAFI); DFG, TH 2122/1-1, May 2024 – April 2028; 149 k€ (Co-PI)

„Investigating the impact of land surface heterogeneity on near-surface circulations and fluxes“, Project P5, Research Unit Land-Atmosphere Feedback Initiative (LAFI); DFG, TH 2122/3-1, May 2024 – April 2028; 255 k€ (Co-PI)

„Wissenschaftliche Auswahlkriterien für die Errichtung von verkehrsnahen Luftqualitätsmessstellen“ (Scientific selection criteria for high-traffic urban air quality stations), Project TLK01ZFuE82522, Bavarian State Ministry of the Environment and Consumer Protection (StUmV); January 2024 – December 2026; 610 k€ (PI)

„Verhalten und Wirkung von Mikroplastik im System Landoberfläche-Atmosphäre“ (Behavior and effects of microplastics at the land surface – atmosphere), Projekt B05, SFB 1357 Microplastics; DFG; Jan 2023 – Dec 2026; 400 k€ (Co-PI)

“Climate change – a challenge for monitoring primary and disturbed tropical rainforest microclimate and biodiversity”, DAAD Summer School; Summer 2022; 28 k€ (PI)

“REINELUFFT? REInigen NEue LUFtFiltersysTeme von urbanem Stickstoffdioxid?” (Do active air cleaning systems remove nitrogen dioxide from urban air?), Subproject AIR, Bavarian State Ministry of the Environment and Consumer Protection (StUmV); October 2020 – September 2023; 1.53 Mill. € (PI)

“Untersuchung der Treibhausgasbilanz und Luftdurchmischung an einem Wiesenstandort im hohen Fichtelgebirge“ (Investigating the greenhouse gas budget and mixing processes at a mountainous grassland in the Fichtelgebirge); Oberfrankenstiftung; February 2019 – June 2022; 132 k€ (Co-PI)

„Verhalten von Mikroplastik im System Landoberfläche-Atmosphäre und gegliedertem Gelände“ (Transport and fate of microplastics at the land surface- air interface and structured terrain), Projekt B05, SFB 1357 Microplastics; DFG; Jan 2019 – Dec 2022; 500 k€ (Co-PI)

“Minimierung Städtischer Klima- und Ozonrisiken (MiSKOR)”; (Minimizing urban climate and ozone risks), Verbundprojekt Klimawandel und Gesundheit; Bavarian State Ministry of the Environment and Consumer Protection (StUMV); April 2018 – March 2020; 410 k€ (PI)

“DarkMix: Illuminating the dark side of surface meteorology: creating a novel framework to explain atmospheric transport and turbulent mixing in the weak-wind boundary layer”, European Research Council (ERC) Consolidator Award, European Union, Horizon 2020; May 2017 – April 2022; 1.9 Mill. € (PI)

“Monitoring and managing protected tropical rainforest biodiversity under climate change”, DAAD Summer School; Summer 2019; 23 k€ (PI)

*In the USA at Oregon State University (October 2008 – August 2014):*

Total of 3.6 Mill USD; share Thomas 1.6 Mill USD

Supplement to “CAREER: A new direction into atmospheric near-surface transport for weak-wind conditions in plant canopies”, Faculty Early Career Development Program, National Science Foundation, Sep 2010- Aug 2015; 29,001 USD; (PI)

“Sensitivity of the Andrews’ complex landscape to past, current, and future climate change: Analysis of spatiotemporal patterns and variability of air temperatures and flow using the regional long-term climate record”, HJ Andrews Faculty Seed Money Program 2012, Long Term Ecological Research (LTER) program funded by National Science Foundation, 20,000 USD; Mar 2012 – Dec 2012; (PI)

“Collaborative Research: ABI Innovation: RUI: From Data to Knowledge in Grand Challenge Environmental Science Research: VISualization of Terrestrial-Aquatic Systems (VISTAS)”; National Science Foundation. 886,346 USD; Sep 2011 – Sep 2014; (Collaborator; share 28,000 USD)

“CAREER: A new direction into atmospheric near-surface transport for weak-wind conditions in plant canopies”, Faculty Early Career Development Program, National Science Foundation, Sep 2010- Aug 2015; 736,680 USD; (PI)

“The effects of disturbance and climate on carbon storage and the exchanges of carbon dioxide, water vapor and energy of coniferous forests in the Pacific Northwest: integration of measurements at a cluster of supersites”, Department of Energy, \$1,049,381, 3-year extension, Sep 2010-Sep 2013; (Co-I, share 284,100 USD)

“Observing Spatial Structure of Near Surface Atmospheric Motions Using a Combination of Optical and Acoustic in-situ and Remote Sensing techniques”, Army Research Office, July 2010 – June 2013; 319,976 USD; (PI; share 238,807 USD)

“The effects of disturbance and climate on carbon storage and the exchanges of CO<sub>2</sub>, water vapor and energy of coniferous forests in the Pacific Northwest: integration of measurements at a cluster of supersites”, Terrestrial Carbon Processes Program, Department of Energy, Sep 2009 – Sep 2010; 447,194 USD; (Co-I; share 116,354 USD)

“Methane and carbon dioxide eddy-covariance flux monitor”, SBIR, Department of Energy; Jan – Aug 2010; 62,348 USD; (Collaborator)

“Economical Three-Dimensional Interrogation of Complex Flows near the Surface and their Transport”, Defense University Research Investment Program, Army Research Office, May 2009-May 2010; 168,434 USD; (PI)

Annual Student Scholarship granted by the German Academic Exchange Service DAAD, 1999; 6,000 EUR, (PI)

## PUBLICATIONS, PEER REVIEWED

(Underlined = advisee)

*ResearcherID statistics: 67 publications, 1889 citations, h-index 25*

Seidler, J., Friedrich, M., **Thomas, C.K.**, Nölscher, A.: Introducing the novel concept of cumulative concentration roses for studying the transport of ultrafine particles from an airport to adjacent residential areas. *Atmospheric Chemistry and Physics*, 24(1), 137-153 (2024). <https://doi.org/10.5194/acp-24-137-2024>

Esders, E., Sittl, S., Krammel, I., Babel, W., Papastavrou, G., **Thomas, C.K.**: Is transport of microplastics different from mineral particles? Idealized wind tunnel studies on polyethylene microspheres. *Atmospheric Chemistry and Physics*, 23(24), 15835-15851 (2023). <https://doi.org/10.5194/acp-23-15835-2023>

Abdoli, M., Lapo, K., Schneider, J., Olesch, J., **Thomas, C.K.**, 2023. Toward quantifying turbulent vertical airflow and sensible heat flux in tall forest canopies using fiber-optic distributed temperature sensing. *Atmos. Meas. Tech.* 16, 809–824. <https://doi.org/10.5194/amt-16-809-2023>

**Thomas, C.K.**, Huss, J.-M., Abdoli, M., Huttarsch, T., Schneider, J., 2022. Solid-Phase Reference Baths for Fiber-Optic Distributed Sensing. *Sensors* 22. <https://doi.org/10.3390/s22114244>

Esders, E.M., Georgi, C., Babel, W., **Thomas, C.K.**, 2022. Quantitative detection of aerial suspension of particles with a full-frame visual camera for atmospheric wind tunnel studies. *Aerosol Sci. Technol.* 0, 1–15. <https://doi.org/10.1080/02786826.2022.2048789>

Zahn, E., Bou-Zeid, E., Good, S.P., Katul, G.G., **Thomas, C.K.**, Ghannam, K., Smith, J.A., Chamecki, M., Dias, N.L., Fuentes, J.D., Alfieri, J.G., Kwon, H., Caylor, K.K., Gao, Z., Soderberg, K., Bambach, N.E., Hipps, L.E., Prueger, J.H., Kustas, W.P., 2022. Direct partitioning of eddy-covariance water and carbon dioxide fluxes into ground and plant components. *Agric. For. Meteorol.* 315, 108790. <https://doi.org/https://doi.org/10.1016/j.agrformet.2021.108790>

Drake, S.A., Rupp, D.E., **Thomas, C.K.**, Oldroyd, H.J., Schulze, M., Jones, J.A., 2022. Increasing Daytime Stability Enhances Downslope Moisture Transport in the Subcanopy of an Even-Aged Conifer Forest in Western Oregon, USA. *J. Geophys. Res. Atmos.* 127, e2021JD036042. <https://doi.org/https://doi.org/10.1029/2021JD036042>

Lapo, K., Freundorfer, A., Fritz, A., Schneider, J., Olesch, J., Babel, W., **Thomas, C.K.**: The Large eddy Observatory, Voitsumra Experiment 2019 (LOVE19) with high-resolution, spatially distributed observations of air temperature, wind speed, and wind direction from fiber-optic distributed sensing, towers, and ground-based remote sensing. *Earth System Science Data*, 14(2), 885-906 (2022). <https://doi.org/10.5194/essd-14-885-2022>

Freundorfer, A., Lapo, K., Schneider, J., **Thomas, C.K.**, 2021. Distributed sensing of wind direction using fiber-optic cables. *J. Atmos. Ocean. Technol.* 38, 1871–1883. <https://doi.org/10.1175/JTECH-D-21-0019.1>

Vogl, T., Hrdina, A., **Thomas, C.K.**, 2021. Choosing an optimal  $\beta$  factor for relaxed eddy accumulation applications across vegetated and non-vegetated surfaces. *Biogeosciences* 18, 5097–5115. <https://doi.org/10.5194/bg-18-5097-2021>

Fischer, W., **Thomas, C.K.**, Zimov, N., Göckede, M., 2022. Grazing enhances carbon cycling but reduces methane emission during peak growing season in the Siberian Pleistocene Park tundra site. *Biogeosciences* 19, 1611–1633. <https://doi.org/10.5194/bg-19-1611-2022>

Fritz, A. M., Lapo, K., Freundorfer, A., Linhardt, T., & Thomas, C. K. (2021). Revealing the Morning Transition in the Mountain Boundary Layer Using Fiber-Optic Distributed Temperature Sensing. *Geophysical Research Letters*, 48(9), e2020GL092238. <https://doi.org/https://doi.org/10.1029/2020GL092238>

Pfister, L., Lapo, K., Mahrt, L., & Thomas, C. K. (2021). Thermal Submeso-scale Motions in the Nocturnal Stable Boundary Layer - Part 2: Generating Mechanisms & Implications. *Boundary-Layer Meteorol.*, accepted.

Pfister, L., Lapo, K., Mahrt, L., & Thomas, C. K. (2021). Thermal Submesoscale Motions in the Nocturnal Stable Boundary Layer. Part 1: Detection and Mean Statistics. *Boundary-Layer Meteorology*. <https://doi.org/10.1007/s10546-021-00618-0>

Peltola, O., Lapo, K., Martinkauppi, I., O'Connor, E., Thomas, C. K., & Vesala, T. (2021). Suitability of fibre-optic distributed temperature sensing for revealing mixing processes and higher-order moments at the forest-air interface. *Atmospheric Measurement Techniques*, 14(3), 2409–2427. <https://doi.org/10.5194/amt-14-2409-2021>

Peltola, O., Lapo, K., & Thomas, C. K. (2021). A Physics-Based Universal Indicator for Vertical Decoupling and Mixing Across Canopies Architectures and Dynamic Stabilities. *Geophysical Research Letters*, 48(5), e2020GL091615. <https://doi.org/https://doi.org/10.1029/2020GL091615>

Lapo, K., Freundorfer, A., Fritz, A., Schneider, J., Olesch, J., Babel, W., & Thomas, C. K. (2021). The Large-eddy Observatory Voitsumra Experiment 2019 (LOVE19) with high-resolution, spatially-distributed observations of air temperature, wind speed, and wind direction from fiber-optic distributed sensing, towers, and ground-based remote sensing. *Earth System Science Data Discussions*, 2021, 1–26. <https://doi.org/10.5194/essd-2020-392>

Zeller, M.-L., Huss, J.-M., Pfister, L., Lapo, K. E., Littmann, D., Schneider, J., Schulz, A., & Thomas, C.K. (2021). The NY-Alesund Turbulence Fiber Optic eXperiment (NYTEFOX): investigating the Arctic boundary layer, Svalbard. *Earth System Science Data*, 13(7), 3439–3452. <https://doi.org/10.5194/essd-13-3439-2021>

Lapo, K., Freundorfer, A., Pfister, L., Schneider, J., Selker, J., & Thomas, C. (2020). Distributed observations of wind direction using microstructures attached to actively heated fiber-optic cables. *Atmospheric Measurement Techniques*, 13(3), 1563–1573. <https://doi.org/10.5194/amt-13-1563-2020>

Mahrt, L., Pfister, L., & Thomas, C. K. (2020). Small-Scale Variability in the Nocturnal Boundary Layer. *Boundary-Layer Meteorology*, 174(1), 81–98. <https://doi.org/10.1007/s10546-019-00476-x>

Freundorfer, A., Rehberg, I., Law, B. E., & Thomas, C. K. (2019). Forest wind regimes and their implications on cross-canopy coupling. *Agric. For. Meteorol.*, 279, 107696. <https://doi.org/https://doi.org/10.1016/j.agrformet.2019.107696>

Foken, T; Babel, W; Thomas, C.K.: Possible errors in flux measurements due to limited digitalization, *Atmospheric Measurement Techniques*, 12, 971-976 (2019), online: 13.02.2019, doi:10.5194/amt-12-971-2019

Linhardt, T; Levy, JS; Thomas, C.K.: Water tracks intensify surface energy and mass exchange in the Antarctic McMurdo Dry Valleys, *The Cryosphere*, 2019, 1-16 (2019), doi:10.5194/tc-2019-8

Pfister, L; Lapo, K; Sayde, C; Selker, JS; Mahrt, L; Thomas, C.K.: Classifying the nocturnal atmospheric boundary layer into temperature and flow regimes, *Quarterly Journal of the Royal Meteorological Society* (2019), doi:10.1002/qj.3508

Sigmund, A; Freier, K; Rehm, TM; Ries, L; Schunk, C; Menzel, A; Thomas, C.K.: Multivariate statistical air mass discrimination for the high-alpine observatory at the Zugspitze mountain, Germany, *Atmospheric Chemistry and Physics*, 2019, 1-31 (2019), doi:10.5194/acp-2019-211

- Kwon, H., Law, B.E., **Thomas, C.K.**, Johnson, B.G., 2018. The influence of hydrological variability on inherent water use efficiency in forests of contrasting composition, age, and precipitation regimes in the Pacific Northwest. *Agric. For. Meteorol.* 249, 488–500. doi:<https://doi.org/10.1016/j.agrformet.2017.08.006>
- Mahrt, L., **Thomas, C.K.**, Grachev, A.A., Persson, P.O.G., 2018. Near-Surface Vertical Flux Divergence in the Stable Boundary Layer. *Boundary-Layer Meteorol.* 169, 373–393. doi:[10.1007/s10546-018-0379-x](https://doi.org/10.1007/s10546-018-0379-x)
- Pfister, L., Sigmund, A., Olesch, J., Thomas, C.K., 2017. Nocturnal Near-Surface Temperature, but not Flow Dynamics, can be Predicted by Microtopography in a Mid-Range Mountain Valley. *Boundary-Layer Meteorol.* 165, 333–348. doi:[10.1007/s10546-017-0281-y](https://doi.org/10.1007/s10546-017-0281-y)
- Sigmund, A., Pfister, L., Sayde, C., **Thomas, C.K.**, 2017. Quantitative analysis of the radiation error for aerial coiled-fiber-optic distributed temperature sensing deployments using reinforcing fabric as support structure. *Atmos. Meas. Tech.* 10, 2149–2162. doi:[10.5194/amt-10-2149-2017](https://doi.org/10.5194/amt-10-2149-2017)
- Argerich, A., Haggerty, R., Johnson, S.L., Wondzell, S.M., Dosch, N., Corson-Rikert, H., Ashkenas, L.R., Pennington, R., **Thomas, C.K.**, 2016. Comprehensive multiyear carbon budget of a temperate headwater stream. *J. Geophys. Res. Biogeosciences* n/a--n/a. doi:[10.1002/2015JG003050](https://doi.org/10.1002/2015JG003050)
- Sayde C., **Thomas CK**, Wagner J, Selker JS. High-resolution wind speed measurements using actively heated fiber optics. *Geophys Res Lett.* 2015;42(22):10,064–10,073. doi:[10.1002/2015GL066729](https://doi.org/10.1002/2015GL066729).
- Kleinknecht, G., Lintz, H., Kruger, A., Niemeier, J., Salino-Hugg, M., **Thomas, C.**, Still, C., Kim, Y., 2015. Introducing a sensor to measure budburst and its environmental drivers. *Front. Plant Sci.* 6, 1–11. doi:[10.3389/fpls.2015.00123](https://doi.org/10.3389/fpls.2015.00123)
- Mahrt L, **Thomas CK**. Surface stress with non-stationary weak winds and stable stratification. *Boundary-Layer Meteorol.* 2015:online first. doi:[10.1007/s10546-015-0111-z](https://doi.org/10.1007/s10546-015-0111-z).
- Zeeman MJ, Selker JS, **Thomas CK**. Near-surface motion in the nocturnal, stable boundary layer observed with fibre-optic distributed temperature sensing. *Boundary-Layer Meteorology.* 2015;154:189-205. doi:[10.1007/s10546-014-9972-9](https://doi.org/10.1007/s10546-014-9972-9).
- Vickers D., **Thomas C.K.**, 2014 Observations of the scale-dependent turbulence and evaluation of the flux–gradient relationship for sensible heat for a closed Douglas-fir canopy in very weak wind conditions. *Atmos Chem Phys.*;14(18):9665-9676. doi:[10.5194/acp-14-9665-2014](https://doi.org/10.5194/acp-14-9665-2014).
- Vickers, D., **Thomas, C.K.**, 2013. Some aspects of the turbulence kinetic energy and fluxes above and beneath a tall open pine forest canopy. *Agric. For. Meteorol.* 181, 143–151. DOI [10.1016/j.agrformet.2013.07.014](https://doi.org/10.1016/j.agrformet.2013.07.014)
- Thomas, C.K.**, Martin, J.G., Law, B.E., Davis, K., 2013. Toward biologically meaningful net carbon exchange estimates for tall, dense canopies: multi-level eddy covariance observations and canopy coupling regimes in a mature Douglas-fir forest in Oregon. *Agric. For. Meteorol.* 173, 14–27. DOI: [10.1016/j.agrformet.2013.01.001](https://doi.org/10.1016/j.agrformet.2013.01.001)
- Thomas, C.K.**, Smoot, A.R., 2013. An effective, economic, aspirated radiation shield for air temperature observations and its spatial gradients. *J. Atmos. Ocean. Technol.* 30, 526–537. DOI: [10.1175/JTECH-D-12-00044.1](https://doi.org/10.1175/JTECH-D-12-00044.1)
- Mahrt, L., **Thomas, C.K.**, Richardson, S., Seaman, N., Stauffer, D., Zeeman, M.J., 2013. Generation of weak mixing for very stable and weak-wind conditions. *Boundary-Layer Meteorol.* DOI: [10.1007/s10546-012-9782-x](https://doi.org/10.1007/s10546-012-9782-x)
- Zeeman, M.J., Eugster, W., **Thomas, C.K.**, 2013. Concurrency of coherent structures and conditionally sampled daytime sub-canopy respiration. *Boundary-Layer Meteorol.* 146, 1–15. DOI: [10.1007/s10546-012-9745-2](https://doi.org/10.1007/s10546-012-9745-2)

- Vickers, D., **Thomas, C.K.**, Pettijohn, C., Martin, J.G. and Law, B.E., 2012. Five years of carbon fluxes and inherent water-use efficiency at two semi-arid pine forests with different disturbance histories. *Tellus B*, 64: 17159. DOI: 10.3402/tellusb.v64i0.17159.
- Thomas, C.K.**, Kennedy, A.M., Selker, J.S., Moretti, A., Schroth, M.H., Smoot, A.R., Tuffillaro, N.B. and Zeeman, M.J., 2012. High-resolution fibre-optic temperature sensing: A new tool to study the two-dimensional structure of atmospheric surface layer flow. *Boundary-Layer Meteorol.*, 142: 177-192. DOI: 10.1007/s10546-011-9672-7.
- Thomas, C.K.**, 2011. Variability of subcanopy flow, temperature, and horizontal advection in moderately complex terrain. *Boundary-Layer Meteorol.*, 139: 61-81. DOI: 10.1007/s10546-010-9578-9.
- Serafimovich, A., **Thomas, C.K.** and Foken, T., 2011. Vertical and horizontal transport of energy and matter by coherent motions in a tall spruce canopy. *Boundary-Layer Meteorol.*, 140: 429-451. 10.1007/s10546-011-9619-z.
- Petrides, A.C., Huff, J., Arik, A., Van de Giesen, N., Kennedy, A.M., **Thomas, C.K.** and Selker, J.S., 2011. Shade Estimation Over Streams Using Distributed Temperature Sensing. *Water Resour Res*, 47: W07601. DOI: 10.1029/2010WR009482.
- Zhang, Y., Heping, L., Foken, T., Williams, Q.L., Mauder, M. and **Thomas, C.K.**, 2010. Coherent structures and flux contribution over an inhomogeneously irrigated cotton field. *Theor. Appl. Climatol.*: DOI: 10.1007/s00704-010-0287-6.
- Vickers, D., **Thomas, C.K.**, Martin, J.G. and Law, B., 2010. Reply to the comment on Vickers et al. (2009): Self-correlation between assimilation and respiration resulting from flux partitioning of eddy-covariance CO<sub>2</sub> fluxes. *Agric. For. Meteorol.*, 150(2): 315-317.
- Thomas, C.K.**, Law, B.E., Irvine, J., Martin, J.G., Pettijohn, J.C. and Davis, K.J., 2009. Seasonal hydrology explains inter-annual and seasonal variation in carbon and water exchange in a semi-arid mature Ponderosa Pine forest in Central Oregon. *J. Geophys. Res.-Biogeosci.*, 114, G04006: doi: 10.1029/2009JG001010.
- Mahrt, L., **Thomas, C.K.** and Prueger, J.H., 2009. Space-time structure of mesoscale modes in the stable boundary layer. *Quart. J. Roy. Meteorol. Soc.*: 67-75.
- Turner, D.P., Ritts, W.D., Wharton, S., **Thomas, C.**, Monson, R., Black, T.A. and Falk, M., 2009. Assessing FPAR source and parameter optimization scheme in application of a diagnostic carbon flux model. *Remote Sensing of Environment*, 113(7): 1529-1539.
- Vickers, D., **Thomas, C.K.**, Martin, J.G. and Law, B., 2009. Self-correlation between assimilation and respiration resulting from flux partitioning of eddy-covariance CO<sub>2</sub> fluxes. *Agric. For. Meteorol.*(149): 1552-1555.
- Vickers, D., **Thomas, C.** and Law, B.E., 2009. Random and systematic CO<sub>2</sub> flux sampling errors for tower measurements over forests in the convective boundary layer. *Agricultural and Forest Meteorol.*, 149: 73-83.
- Thomas, C.**, Martin, J.G., Goeckede, M., Siqueira, M.B.S., Foken, T., Law, B.E., Loescher, H.W. and Katul, G., 2008. Estimating daytime subcanopy respiration from conditional sampling methods applied to multi-scalar high frequency turbulence time series. *Agricultural and Forest Meteorol.*, 148: 1210-1229.
- Waring, R., Nordmeyer, A., Whitehead, D., Hunt, J., Newton, M., **Thomas, C.** and Irvine, J., 2008. Why productivity of Douglas-fir is higher in New Zealand than in its native range. *Forest Ecology & Management* 255: 4040-4046.
- Goeckede, M, **Thomas, C.**, Markkanen, T, Mauder, M, Ruppert, J and Foken, T, 2007. Sensitivity of Lagrangian Stochastic footprints to turbulence statistics. *Tellus Series B-Chemical and Physical Meteorology*, 59(3): 577-586.
- Thomas, C;** Foken, T, 2007: Flux contribution of coherent structures and its implications for the exchange of energy and matter in a tall spruce canopy, *Boundary-Layer Meteorology*, 123, 317-337

**Thomas, C;** Foken, T, 2007: Organised motion in a tall spruce canopy: temporal scales, structure spacing and terrain effects, *Boundary-Layer Meteorology*, 122, 123-147

Zhang, G., **Thomas, C.**, Leclerc, M.Y., Karipot, A., Gholz, H.L. and Foken, T., 2007. On the effect of clearcuts on forest canopy fluxes. *Theor. Appl. Climatol.*, 88: 133-137.

Foken, T., Wimmer, F., Mauder, M., **Thomas, C.** and Liebethal, C., 2006. Some aspects of the energy balance closure problem. *Atmos. Chem. Phys.*, 6: 4395–4402.

Ruppert, J; Mauder, M; **Thomas, C;** Lüers, J, 2006: Innovative gap-filling strategy for annual sums of CO<sub>2</sub> net ecosystem exchange, *Agricultural and Forest Meteorology*, 138, 5-18

Ruppert, J; **Thomas, C;** Foken, T, 2006: Scalar similarity for relaxed eddy accumulation methods, *Boundary-Layer Meteorology*, 120, 39-63

**Thomas, C.**, Mayer, J.-C., Meixner, F.X. and Foken, T., 2006. Analysis of low-frequency turbulence above tall vegetation using a Doppler sodar. *Boundary-Layer Meteorol.*, 119: 563-587.

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### **ADVISING AND MENTORING**

Bachelor undergraduate thesis students (26)

Master graduate thesis students (28)

PhD thesis students (12)

Postdoctoral scholars (6)

Other advisees (9)