

CURRICULUM VITAE

Lee, Xuhui
(update July 2013)

CONTACT INFORMATION

Address School of Forestry and Environmental Studies, Yale University, 195 Prospect Street,
New Haven, CT 06511 USA
Email Xuhui.lee@yale.edu
Tel 203-432-6271
Homepage <http://pantheon.yale.edu/~xhlee>

EDUCATION

1992 Ph.D., Soil Science, University of British Columbia, Canada
1986 M.Sc., Meteorology, Nanjing Institute of Meteorology, China
1983 B.Sc., Meteorology, Nanjing Institute of Meteorology, China

POSITIONS

2012-present Sara Shallenberger Brown Professor of Meteorology, Yale University
2002-2012 Professor, Yale University
1999-2002 Associate Professor, Yale University
1994- 1999 Assistant Professor, Yale University
1992-1994 Research Associate, University of British Columbia
1988-1992 Graduate Assistant, University of British Columbia
1986-1988 Research Scientist and Lecturer, Nanjing Institute of Meteorology

AWARDS

2003 Outstanding Overseas Young Investigator Award, Natural Science Foundation of China
1999 Award for Excellence in Teaching, School of Forestry and Environmental Studies, Yale University
1996 US National Science Foundation Career Award
1988-1992 University of British Columbia Graduate Fellowship, full support

PROFESSIONAL AFFILIATIONS

American Meteorological Society
American Geophysical Union
Canadian Meteorological and Oceanographic Society

PROFESSIONAL SERVICES

2013-	Member, Scientific Steering Committee, Joint Center on Global Change Studies, Beijing, China
2009-2013	Board of Trustees, Great Mountain Forest Corporation, Connecticut
2009-2012	Member, Scientific Steering Committee on Earth Science Initiative, Tsinghua University, China
2008-present	Editor-in-Chief, Agricultural and Forest Meteorology
2007-present	Guest Professor, Nanjing University of Information, Science and Technology, Nanjing, China
2006	Panel Member, National Institute for Climate Change Research, Department of Energy
2005	Panel Member, LBA Program, NASA
2004-present	Member of Advisory Committee, Ameriflux Science Team
2003-2008	Member of Editorial Board, Agricultural and Forest Meteorology
2001-present	Guest Professor, Chinese Academy of Sciences, Beijing, China
2000-2002	Member, Expert Advisory Panel, Metal in the Environment Research Network, Canada
2000	Panel Member, Terrestrial Carbon Program, Department of Energy
2000	Member of Program Committee, 24 th American Meteorological Society Conference on Agricultural and Forest Meteorology
1999-2001	Chair, American Meteorological Society Committee on Agricultural and Forest Meteorology
1998-2003	Regional Editor for North America, Agricultural and Forest Meteorology
1998	Member of Program Committee, 23 rd American Meteorological Society Conference on Agricultural and Forest Meteorology
1997-1999	Member, American Meteorological Society Committee on Agricultural and Forest Meteorology
1996-1998	Rapporteur, Commission of Agricultural Meteorology, World Meteorological Organization

CHAIR OF PROFESSIONAL MEETINGS AND CONFERENCES

2007	Co-Chair, session on investigation of carbon and water cycle processes using isotopes – new techniques, data, and analyses, AGU Fall Meeting
2007	Co-Chair, session on ecosystem scale isotope fluxes, Annual Ameriflux Science Meeting
2002	Co-Chair, workshop on standardization of flux diagnostics and analysis guidelines, Corvallis, Oregon
1998	Session Chair, 23 rd American Meteorological Society Committee on Agricultural and Forest Meteorology

PEER REVIEW CONTRIBUTIONS

Manuscripts

Advances in Atmospheric Sciences
Advances in Water Resources
Agricultural and Forest Meteorology
Atmospheric Chemistry and Physics
Boundary-Layer Meteorology

Bulletin of American Meteorological Society
Ecological Applications
Global Change Biology
Geoderma
Hydrological Processes
Hydrology and Earth System Sciences
Journal of Atmospheric Sciences
Journal of Atmospheric and Oceanic Technology
Journal of Applied Meteorology
Journal of Geophysical Research
Journal of Hydrometeorology
Journal of Sustainable Forestry
Nature
Nature Climate Change
Oecologia
Plant and Soil
Tellus B
Water Resources Research

Tenure and promotion

East Carolina University
National University of Singapore
Princeton University
State University of New York at Albany
Scripps Institution of Oceanography
University of Connecticut
University of Minnesota
University of Pennsylvania
University of Winnipeg

Research proposals

Canadian Metals in the Environment Network
Chinese Academy of Sciences
Chinese Ministry of Science and Technology
Chinese National Science Foundation
Council for the Earth and Life (The Netherlands)
Department of Energy (USA)
Israel National Science Foundation
National Center for Atmospheric Research (USA)
Natural Sciences and Engineering Research Council of Canada
National Science Foundation (USA)
The Royal Society of New Zealand
UK Natural Environment Research Council, ,

Book proposals

Oxford University Press
Elsevier

UNIVERSITY SERVICES (YALE)

2011-	Provost's Standing Advisory and Appointments Committee for the School of Forestry and Environmental Studies
2011-	Masters Admissions Committee, School of Forestry and Environmental Studies
2009-2011	Faculty Development and Appointments Committee, School of Forestry and Environmental Studies
2009-2010	Climate Science Search Committee, School of Forestry and Environmental Studies
2009	Atmosphere Physics and Climate Dynamics Search Committee, Department of Geology and Geophysics
2008-2009	Non-Ladder Appointments Committee, School of Forestry and Environmental Studies
2004-2007	Director of Doctoral Studies, School of Forestry and Environmental Studies
2002-2007	Space Committee, School of Forestry and Environmental Studies
2002-2006	Environmental Stewardship Committee, School of Forestry and Environmental Studies
2001-	Coordinator, Faculty Focal Group on Global Change, School of Forestry and Environmental Studies
1998	Hydrology Search Committee, School of Forestry and Environmental Studies
1997-2004	Curriculum Committee, School of Forestry and Environmental Studies
1997	Chair, Committee on Hydrology, School of Forestry and Environmental Studies
1996	Doctoral Admissions committee, School of Forestry and Environmental Studies
1995	Committee on School's Forests, School of Forestry and Environmental Studies
1994-	Steering Committee, Yale Center for Earth Observation
1994-2000	Masters Admissions Committee, School of Forestry and Environmental Studies

TEACHING AND MENTORING

Courses taught (Yale University)

2009-	Boundary Layer Meteorology, 3 credits
2008	Lecture Series on China's Environment, 1-3 credits
2008	Seminar in Forest Carbon Science, 1-3 credits, with Mark Ashton
2004-2006	Doctoral Research Seminar, 3 credits
2005	Political Economy of Climate Change, 2-3 credits, with David Runnalls
2002, 2009	Research Methods, 3 credits
2002	Seminar on Remote Sensing Applications, 1 credit, with Mark Ashton
2000-present	Seminar on Climate Change Science and Policy, 2-3 credits
2000-present	A Biological Perspective of Global Change, 3 credits
2000-present	Observing the Earth from Space, 3 credits (team taught)
1998-present	Seminar on Alpine, Boreal and Arctic Ecosystems, 3 credits, with Graeme Berlyn and Mark Ashton
1997-present	Climate and Life, 3 credits
1996	Seminar on Plants and Their Environment, 1 credit, with Graeme Berlyn and Bill Smith
1995-1996	Biometeorology, 3 credits

1994-1998 Forest Meteorology and Methods of Micrometeorology, 3 credits

Doctoral student and dissertation topic

- As Chair/Co-Chair
- Xinzhang Hu. Nocturnal wave-like air motion in forests
 - Kyounghee Kim. Vegetation-air exchange of ^{18}O water isotope
 - Jun Li. Greenhouse gas emissions and uptakes in cropland (Chinese Academy of Sciences)
 - Andrew Richardson. Structure and function of balsam fir and red spruce needles in relation to crown position and along elevational gradients in the mountains of the Northeastern United States
 - Natalie Schultz (current). Land use and surface climate
 - Jeff Sigler. Natural and anthropogenic emissions of mercury to the atmosphere in the northeastern United States
 - Wei Wang (current). Temporal and spatial variations of energy and radiation balance in a large freshwater lake in China (Nanjing University of Information Science and Technology)
 - Hui-Ju Wu. Short term response of soil respiration to wetting
 - Wei Xiao. A modeling investigation of the coupled exchange of ^{18}O in CO_2 and H_2O in a soybean ecosystem (Chinese Academy of Sciences)
 - Yong Zhao (current). Carbon cycles in salt marshes in Connecticut
 - Xin Zhang. Greenhouse gas cycling in cropland
 - Lei Zhao (current). Validation of atmospheric data assimilation products against FluxNet observations

- As Committee Member
- Jesse Bash. Gaseous mercury flux over a temperate forest (University of Connecticut)
 - Martin Bouda. Quantifying the effect of root system architecture on plant water uptake (current)
 - David Butman. Controls on the lateral transport of dissolved organic carbon
 - Kris Covey. Methane emission from heart rot of living trees (current)
 - Curt DellaValle. Aerobiology of pollen and spore allergens
 - Therese Feng. Efficient air pollution regulation of coal-fired power in China
 - Hui He. Stable isotopes in the evaporating atmospheric water vapour
 - Amit Kapur. Will copper survive the next century: examining through futuristic scenarios
 - Wendy Morrison. Assessing the energy costs of climate change: evaluation of impacts on the US energy sector
 - Susan Koenig. The reproductive biology of Jamaica's black-billed parrot and conservation implications
 - Helen Mills. Climate, fire, and vegetation dynamics of the Chihuahuan Desert borderlands
 - Brooke Parry. Carbon and nutrient dynamics in treeline forests in Iceland
 - Ragnhildur Sigurdardottir. Effects of different forest types on total ecosystem carbon sequestration in Hallormsstadur forest, eastern Iceland
 - Thomas Stoughton. Nocturnal boundary layer turbulence over a tree canopy

(University of Connecticut)

- Benjamin Zaitchik. Local drivers of aridity: topography, drought, and land use in the Middle East and beyond

Post-doctoral advisees

Bin Deng, Jianping Huang, Lisa Welp, Xuefa Wen, Wei Xiao

GRANTS – YALE UNIVERSITY

2012-2015	“Biophysical effect of local deforestation on surface climate”, US National Science Foundation, \$299K (pending)
2010-2015	“A doctoral and post-doctoral training program”, Nanjing University of Information Science and Technology, \$400K
2010-2014	"Carbon dioxide and water vapor isotopes in the atmospheric boundary layer", US National Science Foundation, \$240K
2010-2013	"New constraints on the nitrous oxide budget of agricultural ecosystems growing in the Upper Midwest, United States", US Department of Agriculture, \$399K, with John Baker, Kaycie Billmark, Tim Griffis (PI), Dylan Millet, and Rod Venterea
2009-2011	"Land surface properties, regional climate and feedbacks", with Karen Seto and Ron Smith (PI), Yale Climate and Energy Institute Interdisciplinary Grant, \$100K,
2007-2011	"Greenhouse gas fluxes in managed and natural ecosystems in China", Rice Family Foundation, \$200K
2007-2009	"Lecture series on China’s environment", Rice Family Foundation, \$100K
2007-2008	"Cycling of nitrous oxide in farmland", funded by an anonymous donor, \$50K
2006-2009	"Influences of boundary layer flow on vegetation-air exchanges of energy, water and carbon dioxide". National Institute for Climatic Change Research, US Department of Energy, \$363K
2005-2008	"Collaborative research: ecosystem-atmosphere oxygen isotopic fluxes and discrimination mechanisms". US National Science Foundation, with Co-PI T Griffis, \$250K
2003-2007	"Development and application of in-situ measurement of water vapor isotopes for hydrological and ecological research", US National Science Foundation, with Co-PI R B Smith, \$500K
2004-2007	"Response of soil respiration to rain", National Institute for Global Environmental Change, US Department of Energy, \$240K
2001-2004	"Forest ecosystem respiration with the eddy covariance (II)", National Institute for Global Environmental Change, US Department of Energy, with Co-PI T Siccama, \$240K
2000-2003	"Vegetation-atmosphere exchange in non-ideal conditions", US National Science Foundation, \$140K
2000	"AmeriFlux workshop on unaccounted flux in long-term observations of surface-air exchange", National Institute for Global Environmental Change, US Department of Energy, with Co-PI W Massman, \$24K
1999-2000	"Forest ecosystem respiration with the eddy covariance (I)", National Institute for Global Environmental Change, US Department of Energy, \$46K
1996-2000	"CAREER award: nocturnal atmospheric exchange over forests", US National Science

- Foundation, \$230K
- 1996-1999 "Climate change and human response in the semi-arid Near-East using remote sensing", NASA, with R B Smith (PI), F Hole, N Kouchoukos and M L Wilson, \$1,200K
- 1996-1998 "Development and application of a mobile micrometeorological system for measuring volatile mercury flux from Connecticut salt marshes", Connecticut Sea Grant Program, with Co-PI G Benoit, \$105K

GRANTS – NANJING UNIVERSITY OF INFORMATION SCIENCE AND TECHNOLOGY

- 2011-2014 "Observational and modeling investigation on land-atmosphere exchanges", Ministry of Education of China, RMB3,000,000 (~\$470K)
- 2011-2016 "Anthropogenic drivers, environmental quality and climate forcing", Jiangsu Provincial Government, China, RMB5,000,000 (~\$800K)

GRANTS – CHINESE ACADEMY OF SCIENCES

- 2003-2006 "Outstanding overseas young investigator award: Modeling carbon and water exchanges in cropland and natural ecosystems", National Natural Science Foundation of China, RMB400,000 (~\$60K)

INVITED SEMINARS

2011-2013

University of Minnesota
University of Connecticut
Princeton University
University of New Haven

2008-2010

Chinese Academy of Agricultural Sciences, Beijing, China
Xiamen University, Xiamen, China
Nanjing University of Information, Science and Technology, Nanjing, China
Sun Yat-Sen University, Guangzhou, China
Nanjing University
Institute of Atmospheric Physics, Chinese Academy of Sciences, Beijing

2003-2007

Nanjing University of Information, Science and Technology, Nanjing, China
Chinese Academy of Sciences, Beijing, China

Prior to 2003

Harvard University
Chinese Academy of Sciences, Beijing
National Bureau of Meteorology, Beijing, China
Indiana University
University of Northern British Columbia
University of Toronto
Atomic Energy of Canada Ltd., Chalk River Laboratories, Canada

PUBLICATIONS

Papers submitted to or published in referred journals

(reprints available at <http://xleelab.sites.yale.edu/publications>)

1. Griffis TJ, X Lee, JM Baker, MP Russelle, X Zhang, R Venterea, DB Millet (2013) Reconciling the differences between top-down and bottom-up estimates of nitrous oxide emissions for the US Corn Belt. *Global Biogeochemical Cycles*, in press.
2. Huang, J, C Zhou, X Lee, Y Bao, X Zhao, J Fung, A Richter, X Liu (2013) Impact of rapid urbanization on seasonal changes in tropospheric nitrogen dioxide and ozone over East China. *Atmospheric Environment* 77: 558-567.
3. Xiao W, S Liu, W Wang, D Yang, J Xu, Chang Cao, H Li, X Lee (2013) Transfer coefficients of momentum, sensible heat and water vapour in the atmospheric surface layer of a large freshwater lake. *Boundary-Layer Meteorology*, in press.
4. Zhang X, X Lee, TJ Griffis, JM Baker, M Erickson, N Hu, W Xiao (2013) The influence of plants on atmospheric methane in an agriculture-dominated landscape. *International Journal of Biometeorology*, in press.
5. Wen XF, Y Meng, XY Zhang, XM Sun, X Lee (2013) Evaluating calibration strategies for isotope ratio infrared spectroscopy for atmospheric $^{13}\text{CO}_2/^{12}\text{CO}_2$ measurement. *Atmospheric Measurement Techniques* 6:1491-1501.
6. Deng B, S Liu, W Xiao, W Wang, J Jin, X Lee (2013) Evaluation of the CLM4 lake model at a large and shallow freshwater lake. *Journal of Hydrometeorology* 14: 636-649.
7. Covey KR, SA Wood, RJ Warren II, X Lee, MA Bradford (2012) Elevated methane concentrations in trees of an upland forest. *Geophysical Research Letters* 39: L15705, doi:10.1029/2012GL052361.
8. Welp L, X Lee, T Griffis, XF Wen, W Xiao, SG Li, XM Sun, ZM Hu, M Val Martin, JP Huang (2012) A meta-analysis of water vapor deuterium-excess in the mid-latitude atmospheric surface layer. *Global Biogeochemical Cycles* 26: GB3021, doi:10.1029/2011GB004246.
9. Werner C, H Schnyder, M Cuntz, C Keitel, MJ Zeeman, TE Dawson, FW Badeck, E Brugnoli, J Ghashghaie, TEE Grams, ZE Kayler, M Lakatos, X Lee, M Maguas, J Ogee, KG Rascher, RTW Siegwolf, S Unger, J Welker, L Wingate, A Gessler (2012) Progress and challenges using stable isotopes to trace plant carbon and water relations across scales. *Biogeosciences* 9: 3083-3111.
10. Santos E, C Wagner-Riddle, X Lee, J Warland, S Brown, R Staebler, P Bartlett, K Kim (2012) Use of the isotope flux ratio approach to investigate the $\text{C}^{18}\text{O}^{16}\text{O}$ and $^{13}\text{CO}_2$ exchange near the floor of a temperate deciduous forest. *Biogeosciences* 9: 2389-2399.
11. Xiao W, X Lee, X Wen, X Sun, S Zhang (2012) Modeling biophysical controls on canopy foliage water ^{18}O enrichment in wheat and corn. *Global Change Biology* 18: 1769-1780 doi: 10.1111/j.1365-2486.2012.02648.x.
12. Lee X, J Huang, EG Patton (2012) A large-eddy simulation study of water vapour and carbon dioxide isotopes in the atmospheric boundary layer. *Boundary-Layer Meteorology* 145: 229-248.
13. Wen XF, X Lee, XM Sun, JL Wang, SG Li, GR Yu (2012) Inter-comparison of four commercial analyzers for water vapor isotope measurement. *Journal of Atmospheric and Oceanic Technology* 29:235-247.
14. Wen XF, X Lee, XM Sun, JL Wang, SG Li, GR Yu (2012) Dew water isotopic ratios and their relations to ecosystem water pools and fluxes in a cropland and a grassland in China. *Oecologia* 168: 549-561.
15. Mackey CW, X Lee, RB Smith (2012) Remotely sensing the cooling effects of city-scale efforts

- to reduce urban heat island. *Building and Environment* 49: 348-358.
16. Lee X (2012) Editorial: Experimenting with a new form of peer review. *Agricultural and Forest Meteorology* 152:v.
 17. Lee X, ML Goulden, DY Hollinger, A Barr, TA Black, G Bohrer, R Bracho, B Drake, A Goldstein, L Gu, G Katul, T Kolb, B Law, H Margolis, T Meyers, R Monson, W Munger, R Oren, K T Paw U, AD Richardson, HP Schmid, R Staebler, S Wofsy, L Zhao (2011) Observed increase in local cooling effect of deforestation at higher latitudes. *Nature* 479: 384-387.
 18. Schultz NM, TJ Griffis, X Lee, JM Baker (2011) Identification and correction of spectral contamination in D/H and 18O/16O measured in leaf, stem, and soil water. *Rapid Communications in Mass Spectrometry* 25: 3360-3368.
 19. Kim K, X Lee (2011) Transition of stable isotope ratios of leaf water under simulated dew formation. *Plant Cell and Environment* 34: 1790-1801.
 20. Kim K, X Lee (2011) Isotopic enrichment of liquid water during evaporation. *Journal of Hydrology* 399: 364-375.
 21. Huang J, X Lee, EG Patton (2011) Entrainment and budget of heat, water vapor and carbon dioxide in a convective boundary layer driven by time-varying solar radiation. *Journal of Geophysical Research - Atmospheres* 116, D06308, doi:10.1029/2010/JD014938.
 22. Griffis TG, X Lee, JM Baker, K Billmark, N Schultz, M Erickson, X Zhang, J Fassbinder, W Xiao, N Hu (2011) Oxygen isotope composition of evapotranspiration and its relation to C4 photosynthetic discrimination. *Journal of Geophysical Research – Biogeosciences* 116, G01035, doi:10.1029/2010JG001514.
 23. Lee X, W Massman (2011) A perspective on thirty years of the Webb, Pearman and Leuning density corrections. *Boundary-Layer Meteorology* 139: 37-59.
 24. South D, X Lee, MG Messina (2011) Will afforestation in temperate zones warm the Earth? *Journal of Horticulture and Forestry* 3: 195-199.
 25. Wu HJ, X Lee (2011) Short-term effects of rain on soil respiration in two New England forests. *Plant and Soil* 338: 329-342, doi 10.1007/s11104-010-0548-2.
 26. Zhang J, X Lee, G Song, S Han (2011) Pressure correction to the long-term measurement of carbon dioxide flux. *Agricultural and Forest Meteorology* 151:70-77.
 27. Griffis TJ, SD Sargent, X Lee, JM Baker, J Greene, M Erickson, X Zhang, K Billmark, N Schultz, W Xiao, N Hu (2010) Determining the oxygen isotope composition of evapotranspiration using eddy covariance. *Boundary-Layer Meteorology* 137: 307-326.
 28. Lee (2010) Forests and climate: a warming paradox. *Science* 328: 1479.
 29. Lee X (2010) East and West at a crossroad: a commentary on China's environmental regulation and resource use. *Journal of Resources and Ecology* 1: 87-93.
 30. Xiao W, X Lee, TJ Griffis, K Kim, LR Welp, Q Yu (2009) A modeling investigation of canopy-air oxygen isotopic exchange of water vapor and carbon dioxide in a soybean field. *Journal of Geophysical Research – Biogeosciences*, 115, G01004, doi:10.1029/2009JG001163
 31. Wen XF, SC Zhang, XM Sun, GR Yu, X Lee (2009) Water vapor and precipitation isotope ratios in Beijing, China. *Journal of Geophysical Research – Atmospheres*, in press.
 32. Lee X, TJ Griffis, JM Baker, KA Billmark, K Kim, LR Welp (2009) Canopy-scale kinetic fractionation of atmospheric carbon dioxide and water vapor isotopes. *Global Biogeochemical Cycles* 23: GB1002, doi:10.1029/2008GB003331.
 33. Huang J, X Lee, EG Patton (2009) Dissimilarity of scalar transport in the convective boundary layer in inhomogeneous landscapes. *Boundary-Layer Meteorology* 130: 327-345.
 34. Lee X (2008) Editorial: A note on the scope of the journal. *Agricultural and Forest Meteorology* 148: 1401.

35. Welp LR, X Lee, K Kim, TJ Griffis, K Billmark, JM Baker (2008) $\delta^{18}\text{O}$ of evapotranspiration and the sites of leaf evaporation in a soybean canopy. *Plant Cell and Environment* 31:1214-1228.
36. Griffis TJ, SD Sargent, JM Baker, X Lee, BD Tanner, J Greene, E Swiatek, K Billmark (2008) Direct measurement of biosphere-atmosphere isotopic CO_2 exchange using the eddy covariance technique. *Journal of Geophysical Research – Atmospheres* 113: D08304, doi: 10.1029/2007/JD009297.
37. Huang J, X Lee, EG Patton (2007) A modeling study of flux imbalance and the influence of entrainment in the convective boundary layer. *Boundary-Layer Meteorology* 27: 273-292.
38. Wen XF, XM Sun, SC Zhang, GR Yu, SD Sargent, X Lee (2007) Continuous measurement of water vapor D/H and $^{18}\text{O}/^{16}\text{O}$ isotope ratios in the atmosphere. *Journal of Hydrology* 349: 489-500.
39. Lee X, K Kim, R Smith (2007) Temporal variations of the isotopic signal of the whole-canopy transpiration in a temperate forest. *Global Biogeochemical Cycles* 21: GB3013, doi:10.1029/2006GB002871.
40. Wang J, Q Yu, X Lee (2007) Simulation of crop growth and energy and carbon dioxide fluxes at different time steps from hourly to daily. *Hydrological Processes* 21: 2474-2492.
41. Yu Q, S Xu, J Wang, X Lee (2007) Influence of leaf water potential on diurnal changes in CO_2 and water vapour fluxes. *Boundary-Layer Meteorology* 124: 161-181.
42. Sigler J, X Lee (2007) Reply to comment by T Michaels on “Recent trends in anthropogenic mercury emission in the northeast United States transpiration”. *Journal of Geophysical Research – Atmospheres* 112: D13314, doi: 10.1029/2006JD008069.
43. Sigler J, X Lee (2006) Gaseous mercury in background forest soil in the northeastern United States. *Journal of Geophysical Research – Biogeosciences* 111 (2)L Art # G02007, doi: 10.1029/2005JG000106.
44. Sigler J, X Lee (2006) Recent trends in anthropogenic mercury emission in the northeast United States. *Journal of Geophysical Research – Atmospheres* 111: Art# D14316, doi:10.1029/2005JD006814.
45. Lee X, R Smith, J Williams (2006) Water vapor $^{18}\text{O}/^{16}\text{O}$ isotope ratio in surface air in New England, USA. *Tellus B* 58: 293-304.
46. Yu GR, XF Wen, XM Sun, BD Tanner, X Lee, JY Chen (2006) Overview of ChinaFLUX and evaluation of its eddy covariance measurement. *Agricultural and Forest Meteorology* 137: 125-137.
47. Lu P, Q Yu, X Lee (2006) Phenology change in response to urban climate change in Beijing China. *Agricultural and Forest Meteorology* 138: 120-131.
48. Griffis TJ, X Lee, JM Baker, SD Sargent, JY King (2005) Feasibility of quantifying ecosystem-atmosphere $\text{C}^{18}\text{O}^{16}\text{O}$ exchange using laser spectroscopy and the flux-gradient method. *Agricultural and Forest Meteorology* 135: 44-60.
49. Lee X, S Sargent, R Smith, B Tanner (2005) In-situ measurement of water vapor $^{18}\text{O}/^{16}\text{O}$ isotope ratio for atmospheric and ecological applications. *Journal of Atmospheric and Oceanic Technology* 22: 555-565.
50. Richardson AD, X Lee, AJ Friedland (2004) Microclimatology of treeline spruce-fir forests in the mountains of the northeastern United States. *Agricultural and Forest Meteorology* 125: 53-66.
51. Lee X (2004) A model for scalar advection inside canopies and application to footprint investigation. *Agricultural and Forest Meteorology* 127: 131-141.
52. Lee X, Q Yu, X Sun, J Liu, Q Min, Y Liu, X Zhang (2004) Micrometeorological fluxes under the influence of regional and local advection: a revisit. *Agricultural and Forest Meteorology* 122: 111-124.
53. Lee X, HJ Wu, J Sigler, JC Oishi, T Siccama (2004) Rapid and transient response of soil respiration to rain. *Global Change Biology* 10:1017-1026.

54. Sigler JM, X Lee, W Munger (2003) Emission and long-range transport of gaseous mercury from a large-scale Canadian boreal forest fire. *Environmental Science and Technology* 37: 4343-4347.
55. Richardson AD, EG Denny, TG Siccama, X Lee (2003) Evidence for a rising cloud ceiling in eastern North America. *Journal of Climate* 16: 2093-2098.
56. Lee X (2003) Fetch and footprint of turbulent fluxes over vegetation stands with elevated sources. *Boundary-Layer Meteorology* 107: 561-579.
57. Fladeland MM, MS Ashton, X Lee (2003) Landscape variations in understory PAR for a mixed deciduous forest in New England, USA. *Agricultural and Forest Meteorology* 118: 137-141.
58. Zhu Z, S Sun, Z Zhang, H Su, Z Tang, X Lee (2002) A note on direct measurement of the aerodynamic resistance over vegetation. *Journal of Atmospheric Science and Oceanic Technology* 19: 1886-1890.
59. Hu X, X Lee, DE Stevens, RB Smith (2002) A numerical study of nocturnal wavelike motion in forests. *Boundary-Layer Meteorology* 102: 199-223.
60. Massman WJ, X Lee (2002) Eddy covariance flux corrections and uncertainties in long-term studies of carbon and energy exchanges. *Agricultural and Forest Meteorology* (FluxNet special issue) 113: 121-144.
61. Barr AG, TJ Griffis, TA Black, X Lee, RM Staebler, JD Fuentes, Z Chen (2002) Comparing the carbon balances of mature boreal and temperate deciduous forest stands. *Canadian Journal of Forestry Research* 32: 813-822.
62. Lee X, X Hu (2002) Forest-air fluxes of carbon and energy over non-flat terrain. *Boundary-Layer Meteorology* 103: 277-301.
63. Baldocchi D, E Falge, L Gu, R Olson, D Hollinger, S Running, P Anthoni, Ch Bernhofer, J Fuentes, A Goldstein, G Katul, B Law, X Lee, Y Malhi, T Meyers, W Munger, W Oechel, R Valentini, S Verma, T Vesala, K Wilson, 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 American Meteorological Society* 82: 2415-2434.
64. Blanken P, TA Black, HH Neumann, G den Hartog, PC Yang, Z Nestic, X Lee (2001) The seasonal water and energy exchange above and within a boreal aspen forest. *Journal of Hydrology* 245: 118-136.
65. Lee X, OR Bullock Jr, RJ Andres (2001) Anthropogenic emission of mercury to the atmosphere in the northeast United States. *Geophysical Research Letters* 28: 1231-1234.
66. He H, X Lee, RB Smith (2001) Deuterium in water vapor evaporated from a coastal salt marsh. *Journal of Geophysical Research* 106: 12183-12191.
67. Lee X (2000) Water vapor density effect on measurements of trace gas mixing ratio and flux with a massflow controller. *Journal of Geophysical Research – Atmospheres* 105: 17807-17810.
68. Lee X, G Benoit, X Hu (2000) Total gaseous mercury concentration and flux at a coastal salt marsh in Connecticut, USA. *Atmospheric Environment* 34: 4205-4213.
69. Mahrt L, X Lee, A Black, H Neumann, RM Staebler (2000) Nocturnal mixing in a forest subcanopy. *Agricultural and Forest Meteorology* 101: 67-78.
70. Lee X (2000) Air motion within and above forest vegetation in non-ideal conditions. *Forest Ecology and Management* 135: 3-18.
71. Staebler RM, JD Fuentes, X Lee, KJ Puckett, HH Neumann, MJ Deaery, JA Arnold (1999) Long-term flux measurements at the Borden Forest. *Canadian Meteorological and Oceanographic Society Bulletin* 28: 9-16.
72. Lee X (1999) Reply to comment by Finnigan on "On micrometeorological observations of surface-air exchange over tall vegetation". *Agricultural and Forest Meteorology* 97: 65-67.
73. Lee X, JD Fuentes, R Staebler, HH Neumann (1999) Long-term observation of the atmospheric

- exchange of CO₂ with a temperate deciduous forest in southern Ontario, Canada. *Journal of Geophysical Research – Atmospheres* 104: 15975-15984.
74. Lee X (1998) On micrometeorological observations of surface-air exchange over tall vegetation. *Agricultural and Forest Meteorology* 91: 39-49.
 75. Lee X, AG Barr (1998) Climatology of gravity waves in a forest. *Quarterly Journal of Royal Meteorological Society* 124: 1403-1419.
 76. Blanken PD, TA Black, PC Yang, G den Hartog, HH Neumann, Z Nestic, R Staebler, MD Novak, X Lee (1997) Energy balance and canopy conductance of a boreal aspen forest: partitioning overstory and understory components. *Journal of Geophysical Research – Atmospheres* 102: 28915-27.
 77. Lee X (1997) Gravity waves in a forest: a linear analysis. *Journal of Atmospheric Science* 54: 2574-2585.
 78. Lee X, HH Neumann, G den Hartog, JD Fuentes, TA Black, RE Mickle, PC Yang, PD Blanken (1997) Observation of gravity waves in a boreal forest. *Boundary-Layer Meteorology* 84: 383-398.
 79. Chen W, MD Novak, TA Black, X Lee (1997) Coherent eddies and temperature structure functions for three contrasting surfaces. Part I: ramp model with finite microfront time. *Boundary-Layer Meteorology* 84: 99-123.
 80. Chen W, MD Novak, TA Black, X Lee (1997) Coherent eddies and temperature structure functions for three contrasting surfaces. Part II: renewal model for sensible heat flux. *Boundary-Layer Meteorology* 84: 125-147.
 81. Lee X (1996) Turbulence spectra and eddy diffusivity over forests. *Journal of Applied Meteorology* 35: 1307-1318.
 82. Lee X, TA Black, G den Hartog, HH Neumann, Z Nestic, J Olejnik (1996) Carbon dioxide exchange and nocturnal processes over a mixed deciduous forest. *Agricultural and Forest Meteorology* 81: 13-29.
 83. Black TA, G den Hartog, HH Neumann, PD Blankan, PC Yang, C Russell, Z Nestic, X Lee, SG Chen, R Staebler, MD Novak (1996) Annual cycles of water vapor and carbon dioxide fluxes in and above a boreal aspen forest. *Global Change Biology* 2: 219-229.
 84. Lee X, TA Black (1994) Relating eddy correlation sensible heat flux to horizontal sensor separation in the unstable surface layer. *Journal of Geophysical Research – Atmospheres* 99: 18545-553.
 85. Lee X, RH Shaw, TA Black (1994) Modelling the effect of barometric pressure gradient on the mean flow within forests. *Agricultural and Forest Meteorology* 68: 201-212.
 86. Lee X, TA Black, MD Novak (1994) Comparison of flux measurements with closed- and open-path gas analyzers above an agricultural field and a forest floor. *Boundary-Layer Meteorology* 67: 195-202.
 87. Lee X, TA Black (1993) Turbulence near the forest floor in an old-growth Douglas-fir stand on a south-facing slope. *Forest Science* 39: 211-230.
 88. Lee X, TA Black (1993) Atmospheric turbulence within and above a Douglas-fir stand. Part I: Statistical properties of the velocity field. *Boundary-Layer Meteorology* 64: 149-174.
 89. Lee X, TA Black (1993) Atmospheric turbulence within and above a Douglas-fir stand. Part II: Eddy fluxes of sensible heat and water vapor. *Boundary-Layer Meteorology* 64: 369-389.
 90. Black TA, JM Chen, X Lee, RM Sagar (1991) Characteristics of shortwave and longwave irradiance under a Douglas-fir forest stand. *Canadian Journal of Forest Research* 21: 1020-1028.
 91. Lee X (1987) Study on the canopy flow structure: A first-order closure model and its numerical solution (in Chinese with English abstract). *Journal of Nanjing Institute of Meteorology* 10: 310-320.
 92. Lee X (1987) A new approach to solving the Clausius-Clapeyron equation (in Chinese). *Education and Technology in Meteorology* 19: 38-40.
 93. Lee X (1986) On the assumption of canopy resistance in the Penman-Monteith equation' (in Chinese).

Agricultural Meteorology of China 7: 9-13.

94. Lee X (1985) On the estimation of evapotranspiration in western countries: A review (in Chinese with English abstract). *Advances in Mechanics* 15: 333-346.

Book chapters

- Covey KR, J Orefice, X Lee (2012) The physiological ecology of carbon science in forest stands, in *Managing Forest Carbon in a Changing Climate* (M. Ashton, M. L. Tyrrell, D Spalding, B Gentry eds), Springer, New York, 31-49.
- Zhang X, Y Zhao, MS Ashton, X Lee (2012) Measuring carbon in forests, in *Managing Forest Carbon in a Changing Climate* (M. Ashton, M. L. Tyrrell, D Spalding, B Gentry eds), Springer, New York, 139-144.
- Lee X, J Finnigan, KT Paw U (2004) Coordinate systems and flux bias error, in *Handbook of Micrometeorology: A Guide for Surface Flux Measurement and Analysis* (X. Lee, W. Massman, B. Law eds), Kluwer Academic Publishers, Dordrecht, 33-66.
- Lee X (2004) Forest-air exchange in non-ideal conditions: the role of horizontal flux and its divergence, in *Forests at the Land-Atmosphere Interface* (M. Mencuccini, J. Grace, J. Moncrieff, K. G. McNaughton eds), CABI Publishing, 145-157.

Books

- Lee X (2009) *Lectures on China's Environment*. Yale School of Forestry and Environmental Studies Publication Series, Report No 20. (available at <http://pantheon.yale.edu/~xhlee/pubs.htm>)
- Lee X, W Massman, B Law (2004) *Handbook of Micrometeorology: A Guide for Surface Flux Measurement and Analysis*. Kluwer Academic Publishers.

CONFERENCE AND WORKSHOP PRESENTATIONS

2013

- Lee X, T Griffis, W Xiao X Wen. Ecosystem isotopic fluxes of water vapor and carbon dioxide. *International Workshop on Challenges in the Applications of Stable Isotopes across Disciplines and Scales*, Wroclaw, Poland (**INVITED KEYNOTE**)
- Liu S, W Xiao, C Cao, L Deng, C Hu, N Hu, H Li, C Liu, J Shen, S Sun, W Wang, Q Xiao, J Xu, D Yang, M Zhang, X Lee. Lake Taihu eddy flux mesonet for atmospheric and hydrological research. *EGU General Assembly*, Vienna, Austria
- Xiao W, X Lee, X Wen, S Liu, H Li. Validation of the Craig-Gordon isotopic model for lake evaporation. *EGU General Assembly*, Vienna, Austria
- Zhao X, S Yang, W Wang, J Xu, X Lee Urbanization as a driver of the regional thermal environment in the Yangtze River Delta, China. *EGU General Assembly*, Vienna, Austria

2012

- Xiao W, X Lee, S Liu, Z Hu, W Wang, H Lee, Q Xiao. Measuring CH₄, CO₂ and H₂O fluxes over a lake surface with the gradient-diffusion methods. *American Geophysical Union Fall Meeting*, San Francisco, California.
- Griffis T, X Lee, J Baker, M Russelle, X Zhang, R Venterea, D Millet. Regional scale analysis of nitrous oxide emissions within the US Corn Belt and the potential role of episodic hot spots. *American Geophysical Union Fall Meeting*, San Francisco, California.
- Lee X. A perspective on the WPL theory. *30th American Meteorological Society Conference on*

Agricultural and Forest Meteorology, Boston, Massachusetts.

- Zhang M, X Lee, G Yu, S Han, J Yan, H Wang, Y Zhang. Effects of deforestation on land surface air temperature in eastern China. *30th American Meteorological Society Conference on Agricultural and Forest Meteorology*, Boston, Massachusetts.
- Zhao, L, X Lee. Correcting surface solar radiation modeled by two data assimilation systems against FLUXNET observations. *30th American Meteorological Society Conference on Agricultural and Forest Meteorology*, Boston, Massachusetts.
- Zhang X, TJ Griffis, X Lee, M Erickson. Estimating the greenhouse gas budgets of an agriculture-dominated landscape. *30th American Meteorological Society Conference on Agricultural and Forest Meteorology*, Boston, Massachusetts.

2011

- Deng B, X Lee, W Xiao, S Liu, L Zhao, J Jin. Offline test of the CLM-VRLS lake model at Lake Taihu. *American Geophysical Union Fall Meeting*, San Francisco, California.
- Griffis T, N Schultz, X Lee, J Baker. Investigating the source, transport, and isotope fractionation of water vapor in the atmospheric boundary layer. *Conference on The Roles of Stable Isotopes in Water Cycle Research*, Keystone, Colorado.
- Griffis TJ, NM Schultz, X Lee. Investigating the source, transport, and isotope composition of water in the atmosphere. *American Geophysical Union Fall Meeting*, San Francisco, California **(INVITED)**.
- Lee X. Isotopic composition of ecosystem water vapor flux. *Conference on The Roles of Stable Isotopes in Water Cycle Research*, Keystone, Colorado **(INVITED)**.
- Welp L, X Lee, T Griffis, XF Wen, W Xiao SG Li, X Sun, Z Hu, M val Martin. Deuterium-excess of water vapor. *American Geophysical Union Fall Meeting*, San Francisco, California **(INVITED)**.
- Welp L, X Lee, T Griffis, XF Wen, SG Li, X Sun, Z Hu. A meta-analysis of high-frequency d-excess of water vapor measured at six stations. *Conference on The Roles of Stable Isotopes in Water Cycle Research*, Keystone, Colorado.
- Xiao W, X Lee, XF Wen, XM Sun, SC Zhang. Temporal and spatial variabilities of leaf-water ¹⁸O enrichment in wheat and corn. *Conference on The Roles of Stable Isotopes in Water Cycle Research*, Keystone, Colorado.

2010

- Lee, X. Quantifying biological and atmospheric processes with in-situ measurements of carbon dioxide and water vapor isotopes. *American Geophysical Union Fall Meeting*, San Francisco, California **(INVITED)**.
- Lee X. Water vapor isotopes as tracers for ecological and atmospheric research. *Annual ASIAFLUX Workshop*, Guangzhou, China **(INVITED)**.
- Lee X. A forest warming paradox: local climate sensitivity to land use. *Workshop on Forest Carbon Flux*, Taiwan. **(INVITED)**
- Lee X. An eddy covariance mesonet in Lake Taihu. *GreenFlux Workshop*, Mierzecin, Poland **(INVITED)**.
- Lee X, J Huang, E Patton. A LES study of carbon dioxide and water vapor isotopes in the atmospheric boundary layer. *John C Wyngaard Symposium on Atmospheric Turbulence and Boundary Layers*, State College, Pennsylvania.
- Lee X, J Huang, E Patton. Temporal and spatial variations of carbon dioxide and water vapor isotopes in the atmospheric boundary layer. *International Conference on Stable Isotopes and*

Biogeochemical Cycles in Terrestrial Ecosystems, Monte Verità, Switzerland.

- Santos EA, C Wagner-Riddle, X Lee, JS Warland, SE Brown, RM Staebler, PA Bartlett, K Kim. $^{13}\text{O}_2$ and $^{18}\text{O}_2$ temporal variation near the ground and above a temperate deciduous forest. *American Geophysical Union Fall Meeting*, San Francisco, California.
- Schultz NM, TJ Griffis, JM Baker, X Lee, M Erickson, X Zhang, W Xiao, N Hu. Isotope variability in surface water and precipitation in the Upper Midwest, USA. *American Geophysical Union Fall Meeting*, San Francisco, California.
- Sun XM, XF Wen, GR Yu, X Lee. Evapotranspiration partitioning of a winter wheat and summer maize double-cropping system using ^{18}O isotopic labeling. *American Geophysical Union Fall Meeting*, San Francisco, California.
- Wen XF, XM Sun, SG Li, X Lee. Intercomparison of four commercial analyzers for water vapor isotope measurement. *American Geophysical Union Fall Meeting*, San Francisco, California.
- Xin Z, T Griffis, X Lee, J Baker, M Erikson, J Fassbinder. Top-down constraints on the landscape-scale nitrous oxide budget in the Upper Midwest USA. *American Geophysical Union Fall Meeting*, San Francisco, California.
- Zhang X, X Lee, TJ Griffis, DB Millet, JM Baker, MD Erikson, JC Lin. Evaluating land surface flux of methane and nitrous oxide in an agricultural landscape with tall tower measurements and a trajectory model. *29th American Meteorological Society Conference on Agricultural and Forest Meteorology*, Keystone, Colorado.

2009

- Griffis T, X Lee, SD Sargent, JM Baker, K Billmark, N Schultz, M Erickson, X Zhang, J Fassbinder, W Xiao, N Hu. Oxygen isotope composition of evapotranspiration and its relation to C_4 photosynthetic discrimination. *American Geophysical Union Fall Meeting*, San Francisco, California.
- Kim K, X Lee. Dew water effects on leaf water isotope D and ^{18}O contents. *American Geophysical Union Fall Meeting*, San Francisco, California.
- Lee X, J Huang, E Patton. A large eddy simulation study of carbon dioxide and water vapor isotopes in the atmospheric boundary layer. *American Geophysical Union Fall Meeting*, San Francisco, California.
- Santos E, C Wagner-Riddle, J Warland, S Brown, K Kim, X Lee, R Staebler. Stable isotope fluxes of CO_2 and H_2O for a temperate deciduous forest in Canada. *American Geophysical Union Fall Meeting*, San Francisco, California.
- Zhang X, X Lee, X Griffis, J Baker, M Erikson, N Hu, W Xiao. Characterizing CH_4 and N_2O fluxes from a soybean-corn rotation ecosystem in Minnesota. *American Geophysical Union Fall Meeting*, San Francisco, California.
- Warland J, C Wagner-Riddle, R Staebler, X Lee, P Bartlett, S Brown, K Kim, E Santo, M Chang. The Borden Micrometeorological Experiment 2009 (BMW09): micrometeorology and stable isotopes for carbon cycle studies. *American Geophysical Union Fall Meeting*, San Francisco, California.

2008

- Huang J, X Lee, EG Patton. A modeling study of flux imbalance and the influence of entrainment in the convective boundary layer. *28th American Meteorological Society Conference on Agricultural and Forest Meteorology*, Orlando, Florida.
- Kim K, X Lee. Investigation of kinetic fractionation during evaporation using the evaporation flux isotope ratio measured by a tunable diode. *American Geophysical Union Fall Meeting*, San

Francisco, California.

- Lee X. Research on carbon dioxide and water vapor isotopes in the terrestrial environment: an update. *Workshop on Human Activities and Ecosystem Changes*, Beijing, China.
- Welp L, X Lee, K Kim. Variability in the hourly deuterium excess of water vapor near the ground. *American Geophysical Union Fall Meeting*, San Francisco, California.

2007

- Billmark, KA, TJ Griffis, X Lee, LR Welp, JM Baker. Temporal dynamics and environmental controls on carbon isotope discrimination at the canopy scale. *American Geophysical Union Fall Meeting*, San Francisco, California.
- Kim K, X Lee, L Welp. Transition of the isotopic composition of leaf water to the isotopic steady state in soybeans and corns. *American Geophysical Union Fall Meeting*, San Francisco, California.
- Lee X. Measurement and interpretation of water vapor isotopic flux. *Annual Ameriflux Meeting*, Boulder, Colorado.
- Lee X. Measuring water vapor isotopic flux. *Pre-AGU BASIN Meeting*, San Francisco, California **(INVITED)**.
- Lee X, L Welp. TDL water vapor isotope measurements: ambient and flux ratios. *Pre-AGU BASIN Meeting*, San Francisco, California.
- Welp X, X Lee, K Kim, T Griffis, K Billmark, J Baker. $\delta^{18}\text{O}$ of evapotranspiration and the sites of leaf evaporation in a soybean canopy. *American Geophysical Union Fall Meeting*, San Francisco, California.

2006

- Griffis T, J Baker, X Lee, B Breiter, J Zhang, K Billmark, T Bavin, M Erickson, J Smith, J Corcoran. Investigation of carbon cycle processes within a managed landscape: progress and future research. *Annual Ameriflux Meeting*, Boulder, Colorado.
- Griffis T, S Sargent, B Tanner, J Greene, E Swiatek, J Baker, X Lee. Direct measurement of biosphere-atmosphere isotopic CO_2 exchange using the eddy covariance technique. *American Geophysical Union Fall Meeting*, San Francisco, California.
- Kim K, X Lee. Continuous isotope signal of water balance in a northeastern forest in the United States. *27th American Meteorological Society Conference on Agricultural and Forest Meteorology*, San Diego, California.
- Sigler J, X Lee. Gaseous mercury in background forest soil in the northeastern United States. *27th American Meteorological Society Conference on Agricultural and Forest Meteorology*, San Diego, California.
- Welp LR, X Lee, TJ Griffis, K Kim, T Bavin, K Billmark, J Baker. Simultaneous diurnal measurements of stable isotopes of water vapor and CO_2 exchange above a soybean ecosystem using high frequency laser spectroscopy. *American Geophysical Union Fall Meeting*, San Francisco, California.
- Wu HJ, X Lee. Short-term response of soil respiration to rain events in temperate forests. *27th American Meteorological Society Conference on Agricultural and Forest Meteorology*, San Diego, California.

2005

- Lee X. Oxygen isotopic composition of water vapor flux over a mixed temperate forest. *Annual American Crop Society Meeting*, Salt Lake City, Utah **(INVITED)**.

2004

- Lee X, S Sargent, R Smith, B Tanner. In-situ measurement of vapor isotopes for atmospheric and ecological research. *26th American Meteorological Society Conference on Agricultural and Forest Meteorology*, Vancouver, Canada.
- Lee X, R Smith. Interpreting continuous and high resolution time series of vapor 18O/16O ratio in surface air in New England. *American Geophysical Union Fall Meeting*, San Francisco, California.
- Smith R, J Williams, X Lee. Field measurements of isotope fractionation during evaporation. *American Geophysical Union Fall Meeting*, San Francisco, California.
- Wu HJ, X Lee. Response of Soil Respiration to rain in a temperate, hardwood forest in Massachusetts. *Annual NIGEC (National Institute for Global Environmental Change) Meeting*, Harvard Forest, Massachusetts.

2003

- Lee X. A theory for scalar advection inside canopies and application to footprint modeling. *International Workshop on Flux Footprint Observation and Modeling*, Hyytiälä, Finland **(INVITED)**.

2002

- Greene BT, AC Kerr, X Lee. A portable chamber system for measurements of whole-ecosystem CO₂ flux in remote montane ecosystems. *25th American Meteorological Conference on Agricultural and Forest Meteorology*, Norfolk, Virginia.
- Lee X. Coordinate rotation and flux bias. *Workshop on Standardization of Flux Diagnostics and Analysis Guidelines*, Corvallis, Oregon **(INVITED)**.
- Lee X, AC Oishi, J Sigler, T Siccama. Short-term response of carbon dioxide flux to rain and pressure pumping in a forest with shallow soil. *Annual DOE NIGEC (Institute for Global Environmental Change) Meeting*, Harvard Forest, Massachusetts.
- Lee X. Fetch and footprint of turbulent fluxes over vegetative stands. *25th American Meteorological Conference on Agricultural and Forest Meteorology*, Norfolk, Virginia.
- Massman W, X Lee. Update from AmeriFlux QA/QC workshop. *Annual Ameriflux Meeting*, Boulder, Colorado **(INVITED)**.
- Oishi AC, X Lee. Temporal and spatial variations of soil CO₂ in a temperate forest with shallow soil. *25th American Meteorological Conference on Agricultural and Forest Meteorology*, Norfolk, Virginia.
- Sigler JM, JD Fuentes, M Garstang, X Lee. Vertical transport enhances ozone levels in the tropical atmospheric boundary layer. *25th American Meteorological Conference on Agricultural and Forest Meteorology*, Norfolk, Virginia.

2001

- Barr JG, JD Fuentes, RM Staebler, X Lee. Processes governing yearly variations in carbon sequestration at a temperate deciduous forest. *American Geophysical Union Fall Meeting*, San Francisco, California.
- Lee X. Forest-air exchange in non-ideal conditions. *Conference on Forest at the Land-Atmosphere Interface*, Edinburgh, Scotland **(INVITED)**.
- Lee X, W Massman, KT Paw U. EC flux corrections and uncertainties. *Annual Ameriflux Meeting*, Chicago, Illinois **(INVITED)**.

2000

- Barr AG, TA Black, X Lee, RM Staebler, JD Fuentes, Z Chen. Comparing the carbon balances of mature boreal and temperate forest stands. *International Boreal Forest Research Association Workshop*, Edmonton, Canada.
- Barr JG, JD Fuentes, RS Staebler, X Lee. Environmental controls on annual net ecosystem exchange in a temperate mixed deciduous forest. *American Geophysical Union Fall Meeting*, San Francisco, California.
- Hu X, X Lee, DE Stevens. A numerical simulation of nocturnal wavelike motions over forests. *14th American Meteorological Society Symposium on Boundary Layer Meteorology*, Davis, California
- Lee X, X Hu. Influence of advection on carbon and energy fluxes at a forest on nonflat terrain. *24th American Meteorological Conference on Agricultural and Forest Meteorology*, Davis, California.
- Lee X, W Massman. Uncertainties in long-term studies of carbon and energy exchange. *International Fluxnet (Network of Carbon and Energy Study Flux Sites) Workshop*, Marshall, California (**INVITED**).
- Lee X. Field observations of energy and carbon fluxes at the Great Mountain forest. *Annual DOE NIGEC (Institute for Global Environmental Change) Meeting*, Harvard Forest, Massachusetts.
- Massman W, X Lee. Report on the workshop on eddy covariance flux corrections and uncertainties. *Annual Ameriflux Meeting*, Atlanta, Georgia (**INVITED**).
- Sun J, S Burns, D Lenschow, X Hu, X Lee. Intermittent turbulent mixing in stable boundary layers. *American Geophysical Union Fall Meeting*, San Francisco, California.

1998

- Black TA, A Barr, PC Yang, Z Nestic, M Novak, X Lee. Observations of carbon and water exchanges in a boreal aspen site: recent results. *International FluxNet Workshop*, Paulson, Montana.
- Fuentes J, HH Neumann, X Lee, R Staebler. Long-term observations of carbon dioxide exchange in a deciduous forest in southern Ontario, Canada. *International Network of Long-term Flux Studies (FluxNet) Workshop*, Paulson, Montana.
- Hu X, X Lee. Kelvin-Helmholtz billows over forest canopy. *23rd American Meteorological Conference on Agricultural and Forest Meteorology*, Albuquerque, New Mexico.
- Lee X. Nocturnal boundary layer and CO₂ flux measurement issues. *Annual Ameriflux Meeting*, Harvard Forest, Massachusetts (**INVITED**).
- Lee X, TA Black. Biases and uncertainties in nocturnal eddy flux observations. *International FluxNet (Network of Carbon and Energy Study Flux Sites) Workshop*, Paulson, Montana (**INVITED**).
- Lee X. On observations of net ecosystem exchange between forest vegetation and the atmosphere. *23rd American Meteorological Society Conference on Agricultural and Forest Meteorology*, Albuquerque, New Mexico.
- Lee X. Air motion in vegetated landscape in non-ideal conditions. *IUFRO (International Union of Forestry Research Organisations) Conference on Wind and Other Abiotic Risks to Forests and Trees*, Joensuu, Finland (**INVITED KEYNOTE**).
- Mahrt L, X Lee, TA Black, R Staebler, HH Neumann. Vertical mixing in the subcanopy. *23rd American Meteorological Society Conference on Agricultural and Forest Meteorology*, Albuquerque, New Mexico.

- Stoughton TE, DR Miller, X Lee, X Yang. Lidar measurements of nocturnal boundary layer structures above a forest. *23rd American Meteorological Society Conference on Agricultural and Forest Meteorology*, Albuquerque, New Mexico.

1997

- Blanken PD, TA Black, A Barr, PC Yang, Z Nestic, M Novak, X Lee. Energy balance and canopy conductance of a boreal aspen forest. *Boreal Ecosystem-Atmosphere Studies (BOREAS) Workshop*, Annapolis, Maryland.
- He H, RB Smith, X Lee. Observation of deuterium isotope ratio in and above a coastal salt marsh. *American Geophysical Union Fall Meeting*, San Francisco, California.
- Lee X. A linear model for gravity waves in forest. *12th American Meteorological Society Symposium on Boundary Layers and Turbulence*, Vancouver, Canada.
- Lee X. Development and application of a micrometeorological system for quantifying Hg emission from Connecticut salt marshes. *Electrical Power Research Institute (EPRI) Mercury Flux Intercomparison Workshop*, Reno, Nevada.
- Lee X. Bias measurements: laying the groundwork for accurate Hg flux observations. *Automated Mercury Instrumentation Workshop*, Toronto, Canada.

1996

- Black TA, PC Yang, PD Blanken, Z Nestic, G den Hartog, HH Neumann, X Lee, SG Chen, MD Novak. Eddy-correlation measurements of water vapor and CO₂ fluxes above the understory of a boreal aspen forest. *22nd American Meteorological Society Conference on Agricultural and Forest Meteorology*, Atlanta, Georgia.
- Lee X. A spectral model for eddy diffusivity over forests. *American Geophysical Union Spring Meeting*, Baltimore, Maryland.

1995

- Lee X. Nocturnal atmospheric exchange over a mixed deciduous forest. *11th American Meteorological Society Symposium on Boundary-Layer and Turbulence*, Charlotte, North Carolina.

1994

- Lee X, TA Black. Use of within-stand concentration profiles to determine air-vegetation exchange rates. *21st American Meteorological Society Conference on Agricultural and Forest Meteorology*, San Diego, California.
- Orchansky AL, X Lee, MD Novak. Miniature hot wire anemometer to measure very low wind speed. *21st American Meteorological Society Conference on Agricultural and Forest Meteorology*, San Diego, California.

1993

- Lee X, TA Black. Measuring scalar fluxes by eddy correlation with horizontal sensor separation. *13th International Congress of Biometeorology*, Calgary, Canada.

1991

- Lee X, TA Black, JM Chen, RM Sagar. Turbulent fluxes within and above a Douglas-fir stand. *20th American Meteorological Society Conference on Agricultural and Forest Meteorology*, Salt Lake City, Utah.

- Sagar RM, TA Black, X Lee, JM Chen. Heat transfer relationships for deer in Douglas-fir stands. *20th American Meteorological Society Conference on Agricultural and Forest Meteorology*, Salt Lake City, Utah.

1990

- Lee X, TA Black. Wind and turbulence regimes in an old-growth Douglas-fir stand on a south facing slope. *Annual Meeting of the Canadian Society of Agrometeorology*, Penticton, B.C., Canada.