

Curriculum Vitae for Dr. Zong-Liang Yang

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Contact Information

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1 Education

Ph.D., Atmospheric Sciences, 1992, Macquarie University, Australia

M.S., Meteorology, 1989, Melbourne University, Australia

B.S., Meteorology, 1984, Nanjing Institute of Meteorology, China

2 Professional Experience

2008–	Professor (with tenure), University of Texas at Austin
2005–2008	Associate Professor (with tenure), University of Texas at Austin
2001–2005	Assistant Professor, University of Texas at Austin
1998–2001	Research Associate Professor, University of Arizona, Tucson
1997–1998	Adjunct Assistant Professor, University of Arizona, Tucson
1997–1998	Principal Research Specialist, University of Arizona, Tucson
1994–1997	Senior Research Specialist, University of Arizona, Tucson
1993–1994	Research Associate, University of Arizona, Tucson
1992–1993	Research Associate, Macquarie University, Sydney, Australia
1990–1991	Visiting Scientist, Bureau of Meteorology Research Center, Australia, and National Center of Atmospheric Research (NCAR), USA

3 Thesis Title

Land Surface Processes in 3-Dimensional Climate Models

4 Thesis Advisor:

Ann Henderson-Sellers

5 Current Research Interests:

Climate Modeling, Land-Surface Modeling, Flood Modeling, Parameter Estimation, Data Assimilation, Land Surface–Atmosphere Interactions, Terrestrial Hydrology, Remote Sensing, North American Monsoon, Biogenic Emissions, Air Quality, Coastal Zone Environment, Remote Sensing

6 Professional Societies:

- American Geophysical Union, Member
- American Meteorological Society, Member
- Australian Meteorological & Oceanic Society, Member (1990–1992)

7 Grants

7.1 Previous Funding

7.1.1 PI

- National Aeronautics & Space Administration/National Oceanic & Atmospheric Administration, Office for Global Change, *Parameterization of Snow Cover Fraction in Climate and Weather Prediction Models*, \$376,799, 11/1/2002–10/31/2005. No-cost extension to 10/31/2006.
- Department of Homeland Security Graduate Fellowship, *Derivation of a Flood Potential Product Using GIS and Hydrological Modeling: An Investigation of the San Antonio Summer Flood of 2002*, \$27,600/year, 2003–2006, with Marla Knebl (Ph.D. student).
- National Science Foundation Graduate Fellowship, *Development of a Dynamic Groundwater Component for the NCAR Community Climate System Model*, \$30,000/year, 2005–2006, 2007–2009, with Lindsey Gulden (Ph.D. student).
- National Aeronautics & Space Administration, Land-surface Hydrology Program, *Quantifying the effects of sub-grid-scale topography and vegetation on seasonal snow cover, related snowmelt and runoff: Data Analysis and Model Development*, \$350,000, 1998–2001.
- National Science Foundation, Climate Dynamics Program, *Parameterization of the Topographic Control on the Runoff Production Coupled to the CCSM Core Single-Column Land Model*, \$25,055, 2000–2001.
- Educational Advancement Foundation (Mr. Harry Lucas, Jr.), *Developing an inquiry-based modeling approach to global change problems*, \$2,000, 12/1/2002–5/31/2003.
- University of Texas Jackson School of Geosciences Post-doc Matching Funds Program, *Development of a Regional Climate Model for Air Quality Studies*. \$22,000, 11/1/2004–10/31/2005.
- National Oceanic & Atmospheric Administration, Office for Global Change, *Understanding and Simulation of the Effects of Vegetation on North American Monsoon Precipitation*, \$315,000, 6/1/2003–5/31/2006. No-cost extension to 5/31/2007.
- Environmental Protection Agency, NCER STAR Program, *Impacts of Climate Change and Land Cover Change on Biogenic Volatile Organic Compounds (BVOCs) Emissions in Texas*. \$750,000, 11/1/2003–10/31/2006. No-cost extension to 10/31/2007. PI: Zong-Liang Yang; Co-I: Dave Allen and Barbara Parmenter.

7.1.2 Co-PI

- National Aeronautics & Space Administration, *Precursory Signals Associated With Regional and Interannual Variability of the North American Summer Monsoon*, \$400,000, 1998–2001, PI: W.J. Shuttleworth. Co-PI: Z.-L. Yang.
- National Oceanic & Atmospheric Administration, Office for Global Change, *Mechanisms of Ocean-Land-Atmosphere Interaction in the North American Monsoon System*, \$236,784, 2001–2003, PI: A.N. Hahmann. Co-PI: Z.-L. Yang.
- National Oceanic & Atmospheric Administration, Office for Global Change, *Improving Parameter Estimation for Land Surface Parameterization Schemes in Atmospheric Models Using Multiple Objectives*, \$450,000, 1998–2001, PI: S. Sorooshian. Co-I: W.J. Shuttleworth, H. Gupta, Z.-L. Yang and B. Imam.

- Department of Energy, *Land Processes in a High Resolution Community Climate Model with Sub-grid Scale Parameterizations*, \$600,000, 1997–2000, PI: R.E. Dickinson. Co-I: A. Hahmann, A. Seth, Z.-L. Yang, and X. Zeng.
- National Aeronautics & Space Administration, *Aggregate Representation of Terrestrial Land Covers within Global Climate Models*, \$560,000, 1997–1999, PI: W.J. Shuttleworth. Co-I: Z.-L. Yang.
- National Aeronautics & Space Administration, 9 other co-PIs, *Improving the Representation of Land in Climate Models by Application of EOS Observations*, total grant \$1.5 million, \$75,400 to Co-I Z.-L. Yang, 2001–2003 (PI: R.E. Dickinson).
- NASA/Raytheon via UT Center for Space Research, *Texas Synergy Project 4*, \$25,000 to Co-I Z.-L. Yang, 3/1/2003–5/31/2004 (PI: Keith Hutchison at UT CSR). This grant was used to support Marla Knebl’s flood modeling work.
- National Aeronautics & Space Administration, *Using MODIS Data to Characterize Climate Model Land Surface Processes and the Impacts of Land Use/Cover Change on Surface Hydrological Processes*, total grant \$1,916,986, \$102,000 to Yang, 12/1/04–11/30/2007, PI: R. E. Dickinson. Co-I: G. B. Bonan, R. Defries, M. Friedl, F. Gao, M. Jin, J. Knyazikan, S. Liang, W. Lucht, R. Myneni, B. Pinty, N. Shabanov, C. Shaaf, Y. Tian, E. Tsvetsinskaya, M. Verstraete, Z.-L. Yang, X. Zeng, and L. Zhou.
- University of Texas Jackson School of Geosciences Research Initiative Matching Funds Program, *Climate Change and Texas Air Quality*, \$132,500, 4/1/2006–8/31/2009.

7.2 Current Funding

7.2.1 PI

- NASA Interdisciplinary Research in Earth Science (IDS) Program, *Using Satellite Data and Fully Coupled Regional Hydrologic, Ecological and Atmospheric Models to Study Complex Coastal Environmental Processes*, 5/10/07–5/9/10, \$1,236,979. PI: Zong-Liang Yang; Co-I: David Maidment, Paul Montagna, James McClelland, Guo-Yue Niu and Hongjie Xie.
- National Oceanic & Atmospheric Administration, Office for Global Change, Prediction Program for the Americas (CPPA), *Improving Hydrological Representations in the Community Noah Land Surface Model for Intra-seasonal to Interannual Prediction Studies*, \$343,648, 7/1/2007–6/30/2010. PI: Zong-Liang Yang; Co-I: Guo-Yue Niu, Fei Chen and David Gochis.
- NASA Terrestrial Hydrology Program, *Estimating Regional-Scale Snow Water Equivalent from in situ Measurements, Remote Sensing, and Land Surface Modeling with Data Assimilation*, \$458,391, 9/1/2009–8/31/2012. PI: Zong-Liang Yang; Co-I: Guo-Yue Niu and Clark R. Wilson.
- KAUST (King Abdullah University of Science and Technology), *Potential Effects of Global Warming on Hydrology and Water Resources in Saudi Arabia*, \$157,000, 9/1/2008–8/31/2009, no-extension to 1/15/2010.
- NASA Earth and Space Science Fellowship (NESSF), *Using Satellite Observations and a Fully Coupled Land-Atmosphere-Chemistry Model to Study the Coupling between Vegetation and the Hydrologic Cycle through Biogenic Emissions Pathways*, \$24,000/year, 2007–2010, with Xiaoyan Jiang (Ph.D. student).
- NOAA/National Weather Service Office of Hydrologic Development (OHD) Hydrology Graduate Fellowship Training Program, *Improved probabilistic streamflow forecasting using ensembles of calibrated distributed Noah Land-Surface Model, SAC-SMA and statistical*

learning machines within an assimilation framework, \$50,000/year, 1/1/2008 –12/31/2010, with Enrique Rosero (Ph.D. student).

- National Natural Science Foundation of China, *Numerical Modeling of Droughts in Northern China*, 200,000 Chinese dollars, 9/1/2008–8/31/2010. [These funds are used to support Chinese scientists only within China.

7.2.2 Co-PI

- NASA, *GRACE Water Storage for Water Resources Management: Case Study High Plains Aquifer, US*, 2008–2010, \$464,000. PI, B. Scanlon; other Co-PI: Zong-Liang Yang, C. R. Wilson, G.-Y. Niu, and J. Chen.
- NSF P2C2 (Paleo Perspective for Climate Change), *Mechanisms of regional climate change and impacts on water availability in Texas from the Last Glacial Maximum to present-day*, \$379,166, 9/1/08–8/31/12. PI: J. Banner; Co-PI: Zong-Liang Yang.

7.3 Pending Funding

7.3.1 PI

- NASA Interdisciplinary Research in Earth Science (IDS) Program, *Developing and Applying an Integrated Multi-scale Earth System Modeling Framework to Study the Impacts of Changing Climate, Local Weather, and Land Use on Watersheds and Downstream Coastal Ecosystems*, 9/1/10–8/31/13, \$1,655,524. PI: Zong-Liang Yang; Co-I: David Maidment, Paul Montagna, James McClelland, Hongjie Xie, Hae-Cheol Kim, and Wei Min Hao, plus 5 collaborators.
- National Oceanic & Atmospheric Administration, Office for Global Change, Prediction Program for the Americas (CPPA), *Climate Predictability, Process Studies and Modeling through the Ensemble of Multiple Parameterizations of Physical Processes both at the Land Surface and in the Atmosphere*, \$473,974, 5/1/2010–4/30/2013. PI: Zong-Liang Yang; Co-I: Guo-Yue Niu.

7.3.2 Co-PI

- NSF EAR – Hydrological Sciences, *ETBC: Reducing Uncertainty of Projected Resource Changes in the Colorado Headwaters Regions Due to Climate Change*, \$1,053,615, 06/01/09–05/31/12. PI: R. Rasmussen; other Co-PI: V. Grubisic, P.R. Houser, Z.-L. Yang, and D. N. Yates.
- NSF Decision Making Under Uncertainties (DMUU) Program: *Climate Change Collaborative Center (4C)*, \$7,123,418, 1/1/2010 –12/31/2014. PI: J.E. Bickel; Co-PIs: J. Banner, R. Gilbert, A. Markman, and Z.-L. Yang, plus 13 senior personnel.

7.4 Declined Proposals in the Past Years

7.4.1 PI

- National Aeronautics & Space Administration Energy and Water Cycle Study (NEWS) Program, *A Study of Northern Polar-Region Land Surface Energy and Water Balances Using*

Multivariate Observations and Model Simulations, 06/1/2006–05/31/2009, \$591,048. Co-PI: Guo-Yue Niu.

- National Science Foundation Carbon and Water Program, *How Do Parameterizations of Land-Surface Hydrologic Processes Affect Our Ability to Model the Global Carbon Cycle?* 01/01/2007–12/31/2010, \$907,397, Co-I: Guo-Yue Niu and Christine Hawkes.
- National Aeronautics & Space Administration Terrestrial Hydrology Program (THP), *Understanding and Modeling Regional-to-global Terrestrial Water Storage Dynamics*, 06/1/2006–05/31/2009, \$514,598. Co-I: Guo-Yue Niu, Clark Wilson, and Jianli Chen.
- NASA International Polar Year Program, *Integrated Analysis and Interpretation of Multiple Satellite Snow Products in Arctic River Basins Using the Community Land Model*, 06/01/2007–05/31/2010, \$743,099. Co-I: Guo-Yue Niu, Clark R. Wilson, Jianli Chen and Matthew Rodell.
- National Science Foundation, *An Integrated Simulation Framework for Continental Water Dynamics Modeling and Forecasting*, \$1,999,991, 6/1/2008–5/31/2011, Co-PI: David Maidment, Dave Gochis, Ben R. Hodges, Victor Eijkhout; Sr. Personnel: Loukas Kallivokas, Guo-Yue Niu, and Luis Gustavo de Goncalves.
- National Science Foundation, Partnerships for International Research and Education (PIRE), *Understanding and Predicting Water Balance in China under Climate Change, and Land- and Water-Use Decisions*, \$3,000,000+, pre-proposal being selected to submit for UT.

7.4.2 Co-PI

- Environmental Protection Agency, NCER STAR Program, *Effects of Decadal Scale Climate Change on Attainment of the Regional Haze Regulations for Class I Areas*. \$900,000, 1/1/2007–12/31/2009. PI: David T. Allen, Co-I: Zong-Liang Yang and Elena C. McDonald-Buller.
- National Aeronautics & Space Administration Energy and Water Cycle Study (NEWS) Program, *Calibrating Antarctic Snow/Ice and Atmospheric Mass Balance Using Space-Borne Geodetic Measurements*, \$644,892. PI: Jianli Chen. Co-I: Zong-Liang Yang, G.-Y. Niu, Clark Wilson, Donald D. Blankenship and Zhigui Kang.
- NASA Interdisciplinary Science Program, *Terrestrial Biophysical Coupling Mechanisms Contributing to the Trajectory of Atmospheric Carbon*, PI: Robert E. Dickinson, 15 Co-I including Z.-L. Yang.
- DOE/Office of Science Program: Office of Biological and Environmental Research, *UT-Austin NICCER Center for Riparian and Coastal Ecosystems*, PI: Charles Groat. Co-PI: Z.-L. Yang.

8 Publications

8.1 List of Refereed Publications

[All publications are designated with letters A–D and/or ‡ in the right-hand margin of the publication list. A denotes my role as group leader and principal investigator; B primary junior researcher; C essential collaborator; D peripheral collaborator. Invited articles are designated with a double dagger (‡). Underlined names denote the students supervised by me.]

- 1) Pitman, A.J., A. Henderson-Sellers and **Z.-L. Yang**, 1990: Sensitivity of regional climates to localised precipitation in global models, *Nature*, 346, 374-737. (B)
- 2) Henderson-Sellers, A., **Z.-L. Yang** and R.E. Dickinson, 1993: The Project for Intercomparison of Land-surface Parameterization Schemes, *Bulletin of the American Meteorological Society*, **74**, 1335-1349. (B)

- 3) Pitman, A.J., **Z.-L. Yang** and A. Henderson-Sellers, 1993: Sub-grid-scale precipitation in AGCMs: re-assessing the land surface sensitivity using a single column model, *Climate Dynamics*, **9**, 33-41. (B)
- 4) **Yang, Z.-L.** and A.J. Pitman, 1993: Land-surface parameterizations for climate models: A new method for composite fluxes, in *Exchange Processes at the Land-Surface for a Range of Space and Time Scales* (eds. H.-J. Bolle, R.A. Feddes and J.D. Kalma), International Association of Hydrological Sciences (IAHS) Publ. No. 212, 551-559. (B)
- 5) **Yang, Z.-L.**, A.J. Pitman, and A. Henderson-Sellers, 1993: Implementing an advanced land surface scheme into an AGCM: methodology and results, in *Exchange Processes at the Land-Surface for a Range of Space and Time Scales* (eds. by H.-J. Bolle, R.A. Feddes and J.D. Kalma), International Association of Hydrological Sciences (IAHS) Publ. No. 212, 583-590. (B)
- 6) **Yang, Z.-L.**, 1995: Investigating impacts of anomalous land-surface conditions on Australian climate with an advanced land-surface model coupled with the BMRC AGCM, *Int. J. Climatol.*, **15**, 137-174. (B)
- 7) **Yang, Z.-L.**, R.E. Dickinson, A. Henderson-Sellers and A.J. Pitman, 1995: Preliminary study of spin-up processes in landsurface models with the first stage data of Project for Intercomparison of Land Surface Parameterization Schemes Phase 1(a), *J. Geophys. Res.*, **100 (D8)**, 16,553-16,578. (B)
- 8) **Yang, Z.-L.**, A.J. Pitman, B. McAvaney and A. Henderson-Sellers, 1995: The impact of implementing the bare essentials of surface transfer land surface scheme into the BMRC GCM, *Climate Dynamics*, **11**, 279-297. (B)
- 9) Mahfouf, J.-F., C. Ciret, A. Ducharne, P. Irannejad, J. Noilhan, Y. Shao, P. Thornton, Y. Xue and **Z.-L. Yang**, 1996: Analysis of transpiration results from the RICE and PILPS Workshop, *Global and Planetary Change*, **13**, 73-88. (C)
- 10) Unland, H., P. Houser, W.J. Shuttleworth and **Z.-L. Yang**, 1996: Surface flux measurement and modeling at a semi-arid Sonoran desert site, *Agricultural and Forest Meteorology*, **82**, 119-153. (C)
- 11) Wetzol, P., X. Liang, P. Irannejad, A. Boone, J. Noilhan, Y. Shao, C. Skelly, Y. Xue and **Z.-L. Yang**, 1996: Modeling vadose zone liquid water fluxes: Infiltration, runoff, drainage, interflow, *Global and Planetary Change*, **13**, 57-71. (C)
- 12) **Yang, Z.-L.** and R.E. Dickinson, 1996: Description of the biosphere-atmosphere transfer scheme (BATS) for the Soil Moisture Workshop and evaluation of its performance, *Global and Planetary Change*, **13**, 117-134. (B)
- 13) **Yang, Z.-L.** (contributor), 1996: Climate Models – Evaluation, in *Climate Change 1995: The Science of Climate Change. Contribution of Working Group I to the Second Assessment Report of the Intergovernmental Panel on Climate Change*, (eds. J.T. Houghton, L.G. Meira Filho, B.A. Callander, N. Harris, A. Kattenberg and K. Maskell), Cambridge University Press, pp. 229-284. (D)
- 14) Arain, A.M., W.J. Shuttleworth, **Z.-L. Yang**, J. Michaud and A.J. Dolman, 1997: Mapping surface-cover parameters using aggregation rules and remotely sensed cover classes, *Quarterly Journal of Royal Meteorological Society*, **123**, 2325-2348. (C)
- 15) Chen, T.H., A. Henderson-Sellers, P.C.D. Milly, A.J. Pitman, A.C.M. Beljaars, F. Abramopoulos, A. Boone, S. Chang, F. Chen, Y. Dai, C.E. Desborough, R.E. Dickinson, L. Duemenil, M. Ek, J.R. Garratt, N. Gedney, Y.M. Gusev, J. Kim, R. Koster, E.A. Kowalczyk, K. Laval, J. Lean, D. Lettenmaier, X. Liang, J.-F. Mahfouf, H.-T. Mengelkamp, K. Mitchell, O.N. Nasonova, J. Noilhan, J. Polcher, A. Robock, C. Rosenzweig, J. Schaake, C.A. Schlosser, J.-P. Schulz, Y. Shao, A.B. Shmakin, D.L. Verseghy, P. Wetzol, E. Wood, Y. Xue, **Z.-L. Yang** and Q. Zeng, 1997: Cabauw experimental results from the Project for Intercomparison of Land-surface Parameterization Schemes (PILPS), *Journal of Climate*, **10**, 1194-1215. (D)
- 16) Shuttleworth, W.J., **Z.-L. Yang** and A.M. Arain, 1997: Aggregation rules for surface parameters in global models, *Hydrology and Earth System Sciences*, **2**, 217-226. (C)
- 17) White, C. B., P.R. Houser, A.M. Arain, **Z.-L. Yang**, K. Syed and W.J. Shuttleworth, 1997: The aggregate description of semiarid vegetation with precipitation-generated soil moisture heterogeneity, *Hydrology and Earth System Sciences*, **1**, 205-212. (C)

- 18) **Yang, Z.-L.**, R.E. Dickinson, A. Robock and K.Y. Vinnikov, 1997: Validation of the snow sub-model of the Biosphere-Atmosphere Transfer Scheme with Russian snow cover and meteorological observational data, *Journal of Climate*, **10**, 353-373. (B)
- 19) Liang, X., E.F. Wood, D.P. Lettenmaier, D. Lohmann, A. Boone, S. Chang, F. Chen, Y. Dai, C. Desborough, R. Dickinson, Q. Duan, M. Ek, Y. Gusev, F. Habets, P. Irannejad, R. Koster, O. Nasonova, J. Noilhan, J. Schaake, A. Schlosser, Y. Shao, A. Shmakin, D. Verseghy, J. Wang, K. Warrach, P. Wetzel, Y. Xue, **Z.-L. Yang** and Q. Zeng, 1998: The Project for Intercomparison of Land-Surface Parameterization Schemes (PILPS) Phase-2(c) Red-Arkansas River basin experiment: 2. Spatial and temporal analysis of energy fluxes, *Global and Planetary Change*, **19(1-4)**, 137-159. (D)
- 20) Lohmann, D., X. Liang, E.F. Wood, D.P. Lettenmaier, A. Boone, S. Chang, F. Chen, Y. Dai, C. Desborough, R. Dickinson, Q. Duan, M. Ek, Y. Gusev, F. Habets, P. Irannejad, R. Koster, O. Nasonova, J. Noilhan, J. Schaake, A. Schlosser, Y. Shao, A. Shmakin, D. Verseghy, J. Wang, K. Warrach, P. Wetzel, Y. Xue, **Z.-L. Yang** and Q. Zeng, 1998: The Project for Intercomparison of Land-Surface Parameterization Schemes (PILPS) Phase-2(c) Red-Arkansas River basin experiment: 3. Spatial and temporal analysis of water fluxes, *Global and Planetary Change*, **19(1-4)**, 161-179. (D)
- 21) Qu, W., A. Henderson-Sellers, A.J. Pitman, T.H. Chen, F. Abramopoulos, A. Boone, S. Chang, F. Chen, Y. Dai, R.E. Dickinson, L. Duemenil, M. Ek, N. Gedney, Y.M. Gusev, J. Kim, R. Koster, E.A. Kowalczyk, J. Lean, D. Lettenmaier, X. Liang, J.-F. Mahfouf, H.-T. Mengelkamp, K. Mitchell, O.N. Nasonova, J. Noilhan, A. Robock, C. Rosenzweig, J. Schaake, C.A. Schlosser, J.-P. Schulz, A.B. Shmakin, D.L. Verseghy, P. Wetzel, E. Wood, **Z.-L. Yang** and Q. Zeng, 1998: Sensitivity of latent heat flux from PILPS land-surface schemes to perturbations of surface air temperature, *Journal of the Atmospheric Sciences*, **55**, 1909-1927. (D)
- 22) Wood, E.F., D.P. Lettenmaier, X. Liang, D., Lohmann, A. Boone, S. Chang, F. Chen, Y. Dai, C. Desborough, R. Dickinson, Q. Duan, M. Ek, Y. Gusev, F. Habets, P. Irannejad, R. Koster, O. Nasonova, J. Noilhan, J. Schaake, A. Schlosser, Y. Shao, A. Shmakin, D. Verseghy, J. Wang, K. Warrach, P. Wetzel, Y. Xue, **Z.-L. Yang** and Q. Zeng, 1998: The Project for Intercomparison of Land-Surface Parameterization Schemes (PILPS) Phase-2(c) Red-Arkansas River basin experiment: 1. Experimental description and summary intercomparisons, *Global and Planetary Change*, **19(1-4)**, 115-135. (D)
- 23) **Yang, Z.-L.**, R.E. Dickinson, W.J. Shuttleworth and M. Shaikh, 1998: Treatment of soil, vegetation and snow in land-surface models: A test of the biosphere-atmosphere transfer scheme with the HAPEX-MOBILHY, ABRACOS, and Russian data, *Journal of Hydrology*, **213**, 109-127. (§) (B)
- 24) Arain, M.A., E.J. Burke, **Z.-L. Yang** and W.J. Shuttleworth, 1999: Implementing surface parameter aggregation rules in the CCM3 global climate model: regional responses at the land surface, *Hydrology and Earth System Sciences*, **3 (4)**, 463-476. (C)
- 25) Bastidas, L.A., H.V. Gupta, S. Sorooshian, W.J. Shuttleworth and **Z.-L. Yang**, 1999: Sensitivity analysis of a land surface scheme using multicriteria methods, *Journal of Geophysical Research (Atmospheres)*, **104 (D16)**, 19481-19490. (C)
- 26) Gupta, H.V., Bastidas, L.A., S. Sorooshian, W.J. Shuttleworth and **Z.-L. Yang**, 1999: Parameter estimation of a land surface scheme using multicriteria methods, *Journal of Geophysical Research (Atmospheres)*, **104 (D16)**, 19491-19503. (C)
- 27) Jin, J.M., X. Gao, **Z.-L. Yang**, R.C. Bales, S. Sorooshian, R.E. Dickinson, S.-F. Sun and G.-X. Wu, 1999: Comparative analyses of physically based snowmelt models for climate simulations. *Journal of Climate*, **12**, 2643-2657. (C)
- 28) Jin, J.M., X. Gao, S. Sorooshian, **Z.-L. Yang**, R.C. Bales, R.E. Dickinson, S.-F. Sun and G.-X. Wu, 1999: One-dimensional snow water and energy balance model for vegetated surfaces, *Hydrological Processes*, **13**, Issue 14-15, 2467-2482. (C)
- 29) Martin, M., R.E. Dickinson, and **Z.-L. Yang**, 1999: Use of a coupled land surface general circulation model to examine the impacts of doubled stomatal resistance on the water resources of the American Southwest, *Journal of Climate*, **12**, 3359-3375. (C)

- 30) Pitman, A.J., A. Henderson-Sellers, C. E. Desborough, **Z.-L. Yang**, F. Abramopoulos, A. Boone, R. E. Dickinson, N. Gedney, R. Koster, E. Kowalczyk, D. Lettenmaier, X. Liang, J.-F. Mahfouf, J. Noilhan, J. Polcher, W. Qu, A. Robock, C. Rosenzweig, C. A. Schlosser, A. B. Shmakin, J. Smith, M. Suarez, D. Verseghy, P. Wetzel, E. Wood, Y. Xue, 1999: Key results and implications from phase 1(c) of the Project for Intercomparison of Land-surface Parametrization Schemes, *Climate Dynamics*, **15 (9)**, 673-684. (C)
- 31) **Yang, Z.-L.**, Y. Dai, R.E. Dickinson, W.J. Shuttleworth, 1999: Sensitivity of ground heat flux to vegetation cover fraction and leaf area index, *J. Geophys. Res.*, **104 (D16)**, 19505-19514. (‡) (B)
- 32) **Yang, Z.-L.**, R.E. Dickinson, A.N. Hahmann, G.-Y. Niu, M. Shaikh, X. Gao, R.C. Bales, S. Sorooshian, and J.M. Jin, 1999: Simulation of snow mass and extent in global climate models, *Hydrological Processes*, **13 (12-13)**, 2097-2113. (B)
- 33) Burke, E.J., W.J. Shuttleworth, **Z.-L. Yang**, S.L. Mullen and M.A. Arain, 2000: The impact of the parameterization of heterogeneous vegetation on the modeled large-scale circulation in CCM3-BATS, *Geophysical Research Letters*, **27 (3)**, 397-400. (C)
- 34) Schlosser, C.A., A. Slater, A. Robock, A.J. Pitman, K.Y. Vinnikov, A. Henderson-Sellers, N.A. Speranskaya, K. Mitchell, A. Boone, H. Braden, P. Cox, P. DeRosney, C.E. Desborough, Y.J. Dai, Q. Duan, J. Entin, P. Etchevers, N. Gedney, Y.M. Gusev, F. Habets, J. Kim, E. Kowalczyk, O. Nasanova, J. Noilhan, J. Polcher, A. Shmakin, T. Smirnova, D. Verseghy, P. Wetzel, Y. Xue and **Z.-L. Yang**, 2000: Simulations of a boreal grassland hydrology at Valdai, Russia: PILPS Phase 2(d), *Monthly Weather Review*, **128 (2)**, 301-321. (D)
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8.2 Refereed Papers in Press or Submitted for Publication

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- 97) Niu, G.-Y. and **Z.-L. Yang**, 2009: A physically based multi-layer snow parameterization for the NCAR CCM3/LSM, Part I: validation and sensitivity tests in stand-alone experiments, *Journal of Climate*. (A)
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- 100) **Yang, Z.-L.** and G.-Y. Niu, 2009b: Impacts of snow cover fraction on surface air temperature in the NCAR Community Atmosphere Model, *Journal of Hydrometeorology*. (A)
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8.4 Un-refereed Research Reports or Technical Notes

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8.5 Un-refereed Articles in Conference Proceedings

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- 109) **Yang, Z.-L.**, 1993: The impact of pre-existing soil moisture content on Australian climate with an advanced land surface model coupled with the BMRC AGCM. *Fourth International Conference on Southern Hemisphere Meteorology and Oceanography*, Hobart, Australia, March 29–April 2, 1993, American Meteorological Society, 300-301. (B)
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- 111) **Yang, Z.-L.** and R.E. Dickinson, 1994a: Intercomparing soil moisture simulations with one-dimensional meteorological model coupled with different land-surface schemes. *EOS Trans. AGU*, **75(16)**, Spring Meet. Suppl., S162. (B)
- 112) **Yang, Z.-L.** and R.E. Dickinson, 1994b: On the interannual variability of the land surface hydrology and implications for drought: Analysis of results from a climatic model BATS-CCM2. *EOS Trans. AGU*, **75(44)**, Fall Meet. Suppl., F228. (B)
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- 119) Arain, A.M., **Z.-L. Yang**, and W.J. Shuttleworth, 1997: Deriving vegetation parameters in global climate models from remotely sensed land cover classes, *EOS Trans. AGU*, **78(46)**, Fall Meet. Suppl., F267. (C)
- 120) Miller, R.L., R.E. Dickinson and **Z.-L. Yang**, 1997: Investigating parameterizations for the sulfate indirect effect, *EOS Trans. AGU*, **78(46)**, Fall Meet. Suppl., F76. (B)
- 121) **Yang, Z.-L.**, M. Shaikh, A. Hahmann, R.E. Dickinson, and R.C. Bales, 1997: Modeling Snow Processes on GCM Scales, *EOS Trans. AGU*, **78(46)**, Fall Meet. Suppl., F204. (‡) (A)
- 122) Bastidas, L.A., H.V. Gupta, S. Sorooshian, W.J. Shuttleworth, and **Z.-L. Yang**, 1998: Comparison of land surface schemes by use of multi-criteria methods, *EOS Trans. AGU*, 79 (45), Fall Meet. Suppl., F260. (C)
- 123) **Yang, Z.-L.**, R.E. Dickinson, M. Shaikh, X. Gao, R.C. Bales, S. Sorooshian and J.M. Jin, 1998: Simulation of snow mass and extent in global climate models, *Abstracts, International Conference on Snow Hydrology: The Integration of Physical, Chemical and Biological Systems*, J. Hardy, M. Albert, and P. Marsh (Editors), US Army Corps of Engineers, Cold Regions Research & Engineering Laboratory, August 1998. (A)
- 124) Gochis, D., **Z.-L. Yang** and W.J. Shuttleworth, 1999: CCM3 versus observed climatology of the North American Monsoon, *EOS Trans. AGU*, **80 (46)**, Fall Meet. Suppl., F180. (A)
- 125) Niu, G.-Y. and **Z.-L. Yang**, 1999: Snow simulations from a three-layer snow mass and energy model coupled with NCAR CCM3/LSM, *EOS Trans. AGU, Fall Meet., Suppl.*, **80(46)**, F346. (A)
- 126) Shuttleworth, W.J., E.J. Burke, **Z.-L. Yang**, M.A. Arain and S.L. Mullen, 1999: Testing aggregation rules for surface parameters using remotely sensed land cover data and the NCAR Community Climate Model (CCM3) coupled to BATS, *EOS Trans. AGU*, **80 (46)**, Fall Meet. Suppl., F405. (C)
- 127) **Yang, Z.-L.**, G.Y. Niu, and R.E. Dickinson, 1999: Comparing snow simulations from NCAR LSM and BATS using PILPS 2d data, *Preprints, 14th Conference on Hydrology, American Meteorological Society Meeting*, Dallas, TX, USA, January 1999, pp. 316–319. (A)
- 128) Gochis, D., W.J. Shuttleworth, R.A. Maddox and **Z.-L. Yang**, 2000: Quantification of error in a pseudo regional climate simulation of the North American Monsoon, *Southwest Weather Symposium, Tucson, Arizona, September 2000*, x.1-x.5. (A)
- 129) Li, F., R.C. Bales, H.C. Hartmann, **Z.-L. Yang**, J. Kim, N.L. Miller, and S. Sorooshian, 2000: Evaluating seasonal snow simulations from a regional climate model in the western U.S. with high-elevation data sets, *EOS Trans. AGU*, **81 (48)**, Fall Meet. Suppl., H61C-11, F419. (C)
- 130) Niu, G.-Y. and **Z.-L. Yang**, 2000: Validation and Sensitivity Tests of a New Snow Model: Variable Integrator of Snow Atmosphere Processes (VISA), *EOS Trans. AGU, Spring Meet., Suppl.*, **81(19)**, S120. (A)
- 131) **Yang, Z.-L.** and G.Y. Niu, 2000: Snow-climate interaction in NCAR CCM3, *Preprints, 15th Conference on Hydrology, American Meteorological Society Meeting*, Long Beach, CA, USA, January 2000, pp. 24-27. (A)
- 132) **Yang, Z.-L.**, G.-Y. Niu, R.E. Dickinson and M. Stieglitz, 2000: Parameterization of Runoff Production in Common Land Model, *EOS, Transactions, American Geophysical Union, Spring Meeting, Supplement*, **Vol. 81**, No. 19, 2000, page S139. (A)
- 133) Zhan, X., R.S. DeFries, S.O. Los, and **Z.-L. Yang**, 2000: Using vegetation continuous fields data set to aggregate land surface parameters in atmosphere-biosphere interaction models, *EOS Trans. AGU*, **81 (48)**, Fall Meet. Suppl., S2 (2000 Spring Meet. –Corrections). (D)

- 134) Niu, G.-Y. and **Z.-L. Yang**, 2002: Modeling crop growth using modified NCAR LSM 1.0, *13th Symposium on Global Change and Climate Variations*, American Meteorological Society, 13–17 January 2002, Orlando, Florida, pp. J287-J289. (A)
- 135) **Yang, Z.-L.** and G.-Y. Niu, 2002a: Impacts of soil water freezing point on soil freeze-thaw cycles and runoff: A study using the Community Land Model (CLM), *13th Symposium on Global Change and Climate Variations*, American Meteorological Society, 13–17 January 2002, Orlando, Florida, pp. J58-J60. (A)
- 136) **Yang, Z.-L.** and G.-Y. Niu, 2002b: Improving the representation of snow processes in global climate models, *13th Symposium on Global Change and Climate Variations*, American Meteorological Society, 13-17 January 2002, Orlando, Florida, pp. J284-J286. (A)
- 137) Niu, G.-Y. and **Z.-L. Yang**, 2004: Modeling the continental hydrology: The interplay between canopy interception and hill-slope runoff, *9th ASCE Aerospace Division International Conference on Engineering, Construction and Operations in Challenging Environments (Earth & Space 2004)*, League City, TX, March 7–10, 2004. (A)
- 138) **Yang, Z.-L.**, G.-Y. Niu, and Q. Zeng, 2004: Parameterization of fractional snow cover in the NCAR Community Atmosphere Model, *9th ASCE Aerospace Division International Conference on Engineering, Construction and Operations in Challenging Environments (Earth & Space 2004)*, League City, TX, March 7–10, 2004. (A)
- 139) Niu, G.-Y. and **Z.-L. Yang**, 2004: The effects of vegetation canopy processes on snow surface energy and mass balances, *EOS, Trans. AGU, Fall Meet., Suppl.*, **85**, 2004, page F446. (A)
- 140) **Yang, Z.-L.** and G.-Y. Niu, 2004: The impacts of vegetation growth on the development of the North American monsoon system (NAMS), *EOS, Trans. AGU, Fall Meet., Suppl.*, **85**, 2004, page F239. (A)
- 141) Xia, Y., **Z.-L. Yang**, P.L. Stoffa, and M. K. Sen, 2004: Use of different hydrological variables and impacts of atmospheric forcing errors on optimization and uncertainty analysis of the CHASM surface model at a cold catchment, in *Proceedings of the 2nd international CAHMDA workshop on: The Terrestrial Water Cycle: Modelling and Data Assimilation Across Catchment Scales*, edited by A.J. Teuling, H. Leijnse, P.A. Troch, J. Sheffield and E.F. Wood, pp. 124–127, Princeton, NJ, October 25–27, 2004. (C)
- 142) Niu, G.-Y and **Z.-L. Yang**, R.E. Dickinson, L.E. Gulden, and H. Su, 2006: A Simple Groundwater Model (SIMGM) for use in Climate Models: The Impacts of Groundwater Dynamics on Soil Moisture and Evapotranspiration, *Eos Trans. AGU*, 87(36), West. Pac. Geophys. Meet. Suppl., Abstract A21B-06. (A)
- 143) Niu, G.-Y and **Z.-L. Yang**, 2006: Assessing a land surface model's improvements with GRACE estimates, *Eos Trans. AGU*, 87(36), West. Pac. Geophys. Meet. Suppl., Abstract A24A-0003. (A)
- 144) Zhang, X.-P., G.-Y. Niu and **Z.-L. Yang**, 2006: Incorporating Stable Water Isotopes in the Community Land Model, *Eos Trans. AGU*, 87(36), West. Pac. Geophys. Meet. Suppl., Abstract A22B-06. (A)
- 145) **Yang, Z.-L.** and L.E. Gulden, 2006: Issues in the Simulated Biogenic Emissions at a Regional Scale, *Eos Trans. AGU*, 87(36), West. Pac. Geophys. Meet. Suppl., Abstract A25A-06. (A)
- 146) **Yang, Z.-L.**, H. Su and G.-Y. Niu, 2006: Comparison of Two Approaches to Modeling Subgrid Snow Cover Variability, *Eos Trans. AGU*, 87(36), West. Pac. Geophys. Meet. Suppl., Abstract A21A-02. (A)
- 147) Gulden, L.E., M. Rodell, **Z.-L. Yang**, G.-Y. Niu, P.J. Yeh, and J.S. Famiglietti, 2006: Improving land-surface model hydrology: Is an explicit aquifer model better than a deeper soil profile? *Eos Trans. AGU*, 87(52), *Fall Meet. Suppl.*, Abstract H34D-05. (A)
- 148) Strassberg, G, B. Scanlon, G. Niu, and **Z.-L. Yang**, 2006: Comparison of Seasonal Water Storage Variations with Terrestrial Water Storage from the Gravity Recovery and Climate Experiment (GRACE) Over the High Plains Aquifer, *Eos Trans. AGU*, 87(52), *Fall Meet. Suppl.*, Abstract H34D-06. (C)
- 149) Gulden, L.E., E. Rosero, **Z.-L. Yang**, C. S. Jackson, and M. Rodell, 2007: Why is an LSM augmented with an aquifer model less sensitive to parameter choices than a standard LSM? *Eos Trans. AGU*, 88(23), *Jt. Assem. Suppl.*, Abstract H51D-06. (A)

- 150) Rosero, E., L.E. Gulden, **Z.-L. Yang**, G.-Y. Niu, F. Chen, K. Mitchell, and D.J. Gochis, 2007: Do improved hydrological representations in the Community Noah Land Surface Model yield a more robust model? *Eos Trans. AGU*, 88(23), *Jt. Assem. Suppl.*, Abstract H53F-07. (A)
- 151) Jiang, X., C. Wiedinmyer, F. Chen, **Z.-L. Yang**, and J. C. Lo, 2007: Predicted Impacts of Future Climate Change and Land-Use Change on Surface Ozone in the Houston Area, *Eos Trans. AGU*, 88(52), *Fall Meet. Suppl.*, Abstract A51D-0726. (A)
- 152) Niu, G., **Z.-L. Yang**, X. Jiang, and L. E. Gulden, 2007: Representing groundwater dynamics in climate models and its impacts on climate modeling, *Eos Trans. AGU*, 88(52), *Fall Meet. Suppl.*, Abstract H24D-04. (A)
- 153) Niu, G. and **Z.-L. Yang**, 2008: Modeling the impacts of groundwater on soil moisture. *Eos Trans. AGU*, 89(53), *Fall Meet. Suppl.*, Abstract H41B-0868. (A)
- 154) David, C.H., D.R. Maidment, and **Z.-L. Yang**, 2008: Routing application for parallel computation of discharge, *Eos Trans. AGU*, 89(53), *Fall Meet. Suppl.*, Abstract H51H-0967. (A)
- 155) Chen, J., C. Wilson, B. Tapley, **Z.-L. Yang**, and G. Niu, 2008: The 2005 Amazon drought as measured by GRACE and estimated by climate models, *Eos Trans. AGU*, 89(53), *Fall Meet. Suppl.*, Abstract G31B-0658. (D)

8.6 Un-refereed Articles in Workshop Proceedings

[Papers are designated with letters A–D and/or ‡, as appropriate.]

- 156) Yang, Z.-L., W.J. Shuttleworth, and D. Gochis, 1999: Modeling of the North American monsoon in NCAR CCM3, *Proceedings of the 24th Annual Climate Diagnostics and Prediction Workshop*, U.S. Department of Commerce, NOAA, NWS, NCEP, CPC, Tucson, AZ, 5–9 November, 1999, pp. 53–56. (A)

9 Awards and Honors

- Distinguished Achievement Award (shared) - National Center for Atmospheric Research (NCAR) Community Climate System Model (CCSM) Version 3.5 Development, USA, June 2008
- Co-Chair of the NCAR Community Climate System Model (CCSM) Land Working Group (LandWG) 2008–2010
- Adjunct Professor of Lanzhou University, China 2008–present
- Adjunct Professor of The START Regional Center for Temperate East Asia - Institute of Atmospheric Physics of Chinese Academy of Sciences, Beijing, China 2008–present
- Coauthor of Best Student Poster Presentation, 8th Conference on Atmospheric Chemistry, 86th Annual Meeting of the American Meteorological Society, January 28–February 2, 2006.
- Coauthor of AGU Journal Highlight of a GRL paper led by my students; see Gulden, L. E., E. Rosero, Z.-L. Yang, M. Rodell, C. S. Jackson, G. Niu, P. J.-F. Yeh, and J. Famiglietti (2007), Improving land-surface model hydrology: Is an explicit aquifer model better than a deeper soil profile? *Geophys. Res. Lett.*, **34**, L09402, doi:10.1029/2007GL029804.
- The Joseph C. Walter Jr. Excellence Award (the most prestigious internal award in the Jackson School of Geosciences), The University of Texas at Austin, 2007.
- Member, International Professionals for the Advancement of Chinese Earth Sciences (**IPACES**), 2006–present.
- Teaching Excellence Award, College of Natural Sciences, The University of Texas at Austin, 2004.
- Dean's Fellow, College of Natural Sciences, The University of Texas at Austin, Fall 2004.
- Young Scientists' travel award to EGS General Assembly, Hamburg, Germany, 1995.
- Macquarie University Postgraduate Research Award, Australia, 1989–1992.
- NCAR Exchange Visiting Research Scholarship, Boulder, CO, USA, May–Sept 1991.

- Wisconsin summer school (climate system modeling) travel award, USA, July 1991.

10 University Courses Taught

10.1 Undergraduate

At the University of Texas at Austin:

- Living with a Planet (GEO 302P) (www.geo.utexas.edu/courses/302p), Fall 2001
- Earth, Wind and Fire (GEO 302E) (www.geo.utexas.edu/courses/302e/), Spring 2002 & 2003
- Climate: Past, Present and Future (GEO 302C) (www.geo.utexas.edu/courses/302c), Fall 2002 & 2003, Spring 2005, 2006, 2007, 2008, 2009
- Physical Climatology (GEO377P) (www.geo.utexas.edu/courses/387h/), Fall 2005, 2006, 2007, 2008

10.2 Graduate

At the University of Texas at Austin:

- Hydroclimatology (GEO 387H) (www.geo.utexas.edu/courses/387h/indexHYDROCLIM.htm), Spring 2002, 2003 & 2004
- Physical Climatology (GEO387H) (www.geo.utexas.edu/courses/387h/), Fall 2005, 2006, 2007, 2008
- Modern Geological Sciences, one lecture per year, Fall 2005, 2006, 2007, 2008

At the University of Arizona, Tucson:

- Hydroclimatology (HWR 524)

10.3 Tutorials and Short Courses Taught

- “Review of Land Surface Processes”, Presented as a series of three lectures at the ECCE Summer School for Advanced Study in Climate and Environment, Beijing Normal University, Beijing, China, 30 July to 11 August, 2006.
- “The role of land surface processes in the climate system,” Department of Atmospheric Sciences, Nanjing University, China, Nov. 18, 2000.
- “Land Surface Processes,” Advanced Training Course on the Application of Regional Climate Model for Asia, Beijing, China, Nov. 23–Dec. 2, 1998.

10.4 Dissertation and Thesis Supervision

10.4.1 Ph.D. Dissertations Supervised

At the University of Arizona, Tucson, I assisted to supervise the following students:

- Altaf Arain, “Area-Average Representation of Land Surface Covers in Large Atmospheric Models Based on Remotely Sensed Land Surface Cover Data,” now Associate Professor, McMaster University, Canada. [W.J. Shuttleworth, major supervisor]
- David Gochis, “Modeled Sensitivities of the North American Monsoon,” now Scientist II, National Center for Atmospheric Research. [W.J. Shuttleworth, major supervisor]
- Omer Sen, “Improving the Parameterization of Land-Surface Interactions in GCMs using Field Data,” now Senior Scientist, University of Istanbul, Turkey. [W.J. Shuttleworth, major supervisor]
- M. Shaikh, “High-Resolution Simulations of Land Surface Climate with the NCAR Community Climate Model,” now Scientific Consultant, Georgia Institute of Technology. [R.E. Dickinson, major supervisor]

At the University of Texas at Austin, I supervised

- Marla R. Knebl Lowrey, 2006: “Regional scale flood modeling using NEXRAD rainfall, GIS, and HEC-HMS/RAS: A case study for the San Antonio River Basin, Texas,” now Staff Scientist at TRC Brandes (4900 Spicewood Springs Rd. Austin, TX 78759).
- Lindsey E. Gulden, 2009: “Quantification of the confidence that can be placed in land-surface model predictions: Applications to vegetation and hydrologic processes,” now Research Scientist at ExxonMobile, Houston, Texas
- Cedric H. David, 2009: “Towards river flow computation at the continental scale,” [Co-supervisor with David Maidment], now Post-doctoral fellow at the Univ of Texas at Austin
- Enrique Rosero, 2009: “Evaluating enhanced hydrological representations in Noah LSM over transition zones: An ensemble-based approach to model diagnostics,” now Research Scientist at ExxonMobile, Houston, Texas
- Hua Su, 2009: “Large-scale snowpack estimation using ensemble data assimilation methodologies, satellite observations and synthetic datasets”, now Post-doctoral fellow at the Univ of Texas at Austin

10.4.2 Masters Theses Supervised

At the University of Arizona, Tucson, I assisted to supervise the following students:

- Marian Martin, “Use of a coupled land surface general circulation model to examine the impacts of doubled stomatal resistance on the water resources of the American Southwest.” [R.E. Dickinson major supervisor]
- David Paul Streubel, “The Development and Comparison of Two Snow Accumulation - Ablation Models,” now Scientist at the National Weather Service, Anchorage, Alaskan Region. [W.J. Shuttleworth major supervisor]
- Helene E. K. Unland, “Surface Flux Measurement and Modeling at a Semi-Arid Sonoran Desert Site,” now Scientist at the Mexican Institute of Water Technology, Jiutepec, Morelos, Mexico. [W.J. Shuttleworth major supervisor]
- Xue Wei, “Comparison of the albedo computed by land surface models and their evaluation against remotely sensed data,” now Associated Scientist, CIRES, University of Colorado. [R.E. Dickinson major supervisor]
- Carrie B. White, “Soil Moisture Variability in Land Surface-Atmosphere Interactions,” now Scientist at the South Florida Water Management District. [W.J. Shuttleworth major supervisor]

At the University of Texas at Austin, I supervised

- Sally Lynn Holl, “The Sensitivity of Land Surface Model Simulations to Bias Reduction of ERA-15 Downward Radiation Forcing,” now a Programmer at the University of California, Irvine. (Co-Supervisor with Dr. Jay Famiglietti)
- Qianru Zeng, “Temporal and Spatial Variability of Snow Cover as Determined from Data and Models,” now a Research Assistant at the University of Washington, Seattle.

10.4.3 At University of Texas at Austin,

- Thesis Advisor for
 - Xiaoyan Jiang, Ph.D. candidate, who started in the spring of 2006, expected to graduate in summer 2010
 - Mingjie Shi, Ph.D. aspirant who started in the fall of 2008, expected to graduate in summer 2013.
 - Yang Xue, Ph.D. aspirant who started in the fall of 2009, expected to graduate in summer 2014.

- Benjamin Wagman, Ph.D. aspirant who started in the fall of 2009, expected to graduate in summer 2014.
- Varada Vaidya, Ph.D. aspirant who started in the fall of 2002 but left due to family reason after one year's RA research under my supervision.
- Jacqueline (Jacki) Kinney, Ph.D. aspirant, who started in the fall of 2005 but left one year later to become a high-school teacher.
- Amanda Hallock, Ph.D. aspirant who started in the fall of 2006 but left one year later to become a high-school teacher.
- Doctoral Committee member for
 - William Harold Asquith (Ph.D., graduated in 2003. Advisor: Jack Sharp).
 - Jonathan L. Goodall (Ph.D., graduated in 2005. Advisor: David Maidment, Civil Engineering).
 - Jihee Song (Ph.D., graduated in May 2007. Advisor: David Allen, Chemical Engineering).
 - Patrick John Mickler (Ph.D., graduated in 2004. Advisors: Jay Banner and Libby Stern).
 - Ki-Weon Seo (Ph.D., graduated in 2005. Advisor: Clark Wilson).
 - Mingjuan Shi (Ph.D., graduated in 2005. Advisor: Jack Sharp).
 - Linlin Wang (Ph.D., graduated in 2006. Advisor: David Allen, Chemical Engineering).
 - Trevor Budge (Ph.D., graduated in 2008. Advisor: Jack Sharp).
 - Bradley Donald Cey (Ph.D., graduated in 2008. Advisor: Bridget Scanlon).
 - Heather A. Simon (Ph.D., graduated in 2008. Advisor: David Allen, Chemical Engineering).
 - Brad Wolaver (Ph.D., graduated in 2008. Advisor: Jack Sharp).

 - Erick Leuro (Ph.D., in progress. Advisor: Don Blackenship).
 - Betty Jane Reardon, (Ph.D., in progress. Advisor: Tim Keitt, Section of Integrative Biology).
 - Bruce Edward Rodenborn (Ph.D., in progress. Advisor: Harry Swinney, Physics)
 - Ann Thijs (Ph.D., in progress. Advisors: Marcy Litvak and Christine Hawkes, Section of Integrative Biology).

 - Sasha Carter (Ph.D. examining committee, 2004. Advisor: Don Blackenship).
 - Ryan Ewing (Ph.D., examining committee, 2005. Advisor: Gary Kocurek).
 - Robert M. Forkner (Ph.D. examining committee, 2004. Advisor: Mark Cloos).
 - Wei Gao (Ph.D. examining committee, 2002. Advisor: Steve Grand).
 - Eric Kelly (Ph.D. examining committee, 2007. Advisor: William Carlson).
 - Paresh Patel (Ph.D. examining committee, 2006. Advisor: Steven Grand).
- M.S. Committee member for
 - Lelan Anstead (M.S., expected to be graduated in 2007. Advisor: Charles Groat)
 - Aaron Berg (M.S., graduated in 2001. Advisor: Jay Famiglietti).
 - Krishnavikas Gudipati (M.S., graduated in 2003. Advisor: Clark Wilson).
 - Amy Hobbs (M.S., graduated in 2003. Advisor: Jack Sharp).
 - Kelley Keese (M.S., graduated in 2005. Advisor: Bridget Scanlon).
- Undergraduate mentor for four undergraduate students (2001–2002).

11 Service

11.1

Departmental

- Served on the ad hoc faculty evaluation committee (Chair: Rich Kyle), April 2009.
- Chaired the ad hoc committee for Guo-Yue Niu's promotion to Research Scientist, February 2009.
- Served on the Climate Systems Science Search Committee, 2007–2008.
- Served on the Remote Sensing Faculty Search Committee, 2001–2002.
- Served on the Hydrogeology Faculty Search Committee, 2005–2006.
- Served on the Research Scientist Search Committee, 2006.
- Served on the Research Scientist Hiring Strategy Committee, 2005.
- Coordinated NOAA Program Manager Rick Lawford's visit to the Jackson School of Geosciences, the Environmental Science Institute, and the Department of Geological Sciences, February 24–26, 2003.
- Served on the Undergraduate Advising and Awards Committee, 2003–present.
- Served on the Graduate Admission and Support Committee, 2004–present.

11.2 Community

- UT-Austin Representative, University Corporation for Atmospheric Research (UCAR), 2001–2003, 2005, 2008–.
- Co-Chair of the NCAR Community Climate System Model (CCSM) Land Working Group (LandWG). 1 July 2008 to 30 June 2010.
- Adjunct Professor, Lanzhou University, China, 2008–.
- Adjunct Professor, The START Regional Center for Temperate East Asia, Institute of Atmospheric Physics, Chinese Academy of Sciences, Beijing, China, 2008–.

11.3 College/University

- Initiator and Organizer of Climate Forum Seminar Series, Jackson School of Geosciences, Fall 2008–present.
- Member, University of Texas Institute for Geophysics (UTIG) Search Committee for Research Associate (Paleoclimate Modeler), 2001–2002.
- Member, Climate Change Working Group, 2001–present.

12. Lectures

12.1 Conference Presentations

2009

- Yang, Z.-L., G.-Y. Niu, and X. Jiang, 2009: A Framework for Multi-Physics Representation of the Coupled Land-Atmosphere System for Predicting Extreme Weather Events, oral presentation at the *13th AMS Conference on Mesoscale Processes*, Salt Lake City, UT, 17–20 August, 2009.

2008

- Chen, J., C. Wilson, B. Tapley, **Z.-L. Yang**, and G. Niu, 2008: The 2005 Amazon drought as measured by GRACE and estimated by climate models, poster presented to the American Geophysical Union 2008 Fall Meeting, San Francisco, CA, 15–19 December, 2008.
- David, C.H., D.R. Maidment, and **Z.-L. Yang**, 2008: Routing application for parallel computation of discharge, poster presented to the American Geophysical Union 2008 Fall Meeting, San Francisco, CA, 15–19 December, 2008.

- Jiang, X.-Y., **Z.-L. Yang**, and G.-Y. Niu, 2008: How do vegetation growth and water table dynamics affect warm season precipitation? poster presented at the *Climate Prediction Program for the Americas (CPPA) 2008 PI Meeting*, Silver Spring, MD, 29 September –1 October 2008.
- Niu, G.-Y. and **Z.-L. Yang**: A new framework conducive to ensemble weather and climate predictions: Multi-physics in the Noah LSM, poster presented at the *Climate Prediction Program for the Americas (CPPA) 2008 PI Meeting*, Silver Spring, MD, 29 September –1 October 2008.
- Niu, G. and **Z.-L. Yang**, 2008: Modeling the impacts of groundwater on soil moisture. poster withdrawn from the American Geophysical Union 2008 Fall Meeting, San Francisco, CA, 15–19 December, 2008.
- Rosero, E., L. E. Gulden, **Z.-L. Yang**, G.-Y. Niu, 2008: A new, metric-based method for identifying good land-surface models, poster presented at the *Climate Prediction Program for the Americas (CPPA) 2008 PI Meeting*, Silver Spring, MD, 29 September –1 October 2008.
- Su, H., **Z.-L. Yang**, and G.-Y. Niu, 2008: Mapping North American snow water equivalent by assimilating GRACE and MODIS into CLM, poster presented at the *Climate Prediction Program for the Americas (CPPA) 2008 PI Meeting*, Silver Spring, MD, 29 September –1 October 2008.
- **Yang, Z.-L.**, 2008: Impacts of climate change and land cover change on biogenic volatile organic compounds (BVOCs) emissions in Texas, *Future Air Quality with Projected Global Changes: A Progress Review Meeting Presented by EPA Global Change Grantees*, Research Triangle Park, NC, 27–28 October, 2008. [http://es.epa.gov/ncer/publications/workshop/10_27_2008/presentations.html]
- **Yang, Z.-L.**, 2008: Improving hydrological representation in the Community Noah Land Surface Model for intra-seasonal to interannual prediction studies, *Climate Prediction Program for the Americas (CPPA) 2008 PI Meeting*, Silver Spring, MD, 29 September –1 October 2008. [<http://www.eol.ucar.edu/projects/cppa/meetings/200809/>]

2007

- Gulden, L.E., Rodell, M, Niu, G.-Y., **Z.-L. Yang**, P.J. Yeh, and J.S. Famiglietti, 2007: Simulation of regional changes in terrestrial water storage using two land-surface models, oral presentation to the Ninth conference on American Meteorological Society, San Antonio, Texas, 14–18 January 2007.
- Gulden, L.E., E. Rosero, **Z.-L. Yang**, C. S. Jackson, and M. Rodell, 2007: Why is an LSM augmented with an aquifer model less sensitive to parameter choices than a standard LSM? Poster presentation to the AGU Joint Assembly, Acapulco, Mexico, 22–25 May 2007.
- Jiang, X.-Y., Niu, G.-Y., and **Z.-L. Yang**, 2007: The Sensitivity of North American Warm Season Precipitation to Vegetation and Groundwater Dynamics, oral presentation to the Ninth conference on American Meteorological Society, San Antonio, Texas, 14–18 January 2007.
- Knebl, M.R., and **Z.-L. Yang**, 2007: Assessing the capability of a regional-scale weather model to simulate extreme precipitation patterns and flooding: Central Texas, USA, poster presented to the Ninth conference on American Meteorological Society, San Antonio, Texas, 14–18 January 2007.
- Lo, J. C. F. and **Z.-L. Yang**, 2007: Evaluation of the WRF model for regional climate downscaling driven by CCSM3 at T85 resolution, oral presentation to the Ninth conference on American Meteorological Society, San Antonio, Texas, 14–18 January 2007.
- Rosero, E., L.E. Gulden, **Z.-L. Yang**, G.-Y. Niu, F. Chen, K. Mitchell, and D. Gochis, 2007: Do improved hydrological representations in the Community Noah Land Surface Model yield a more robust model? Oral presentation to the AGU Joint Assembly, Acapulco, Mexico, 22–25 May 2007.
- Su, H., **Z.-L. Yang** and Niu, G.-Y., 2007: Assimilating MODIS Snow Cover Data for Global Snow Water Equivalent Estimation Using Ensemble Kalman Filter and An Improved Observational Operator, poster presented to the Ninth conference on American Meteorological Society, San Antonio, Texas, 14–18 January 2007.

- Niu, G.-Y. and **Z.-L. Yang**, 2007: Terrestrial Water Storage Change from 1948–2004 as Modeled by a Land Surface Model, oral presentation to the Ninth conference on American Meteorological Society, San Antonio, Texas, 14–18 January 2007.
- Wang, X.-M., W. Li and **Z.-L. Yang**, 2007: Impacts of Biogenic and Anthropogenic Emissions on Photochemical Oxidants over the Pearl River Delta Region, China, oral presentation to the Ninth conference on American Meteorological Society, San Antonio, Texas, 14–18 January 2007.
- Wang, X.-M., W. Li, L. Yang, R. Deng, and **Z.-L. Yang**, 2007: A Numerical Study of Influences of Land-Use Change on Chemical Species over the Pearl River Delta Region, China, oral presentation to the Ninth conference on American Meteorological Society, San Antonio, Texas, 14–18 January 2007.
- **Yang, Z.-L.** and G.-Y. Niu, 2007: Modeling Regional-to-Global-Scale Terrestrial Water Storage Dynamics, oral presentation to the Ninth conference on American Meteorological Society, San Antonio, Texas, 14–18 January 2007.
- **Yang, Z.-L.**, X. Jiang, and G.-Y. Niu, 2007: Progress in modeling land surface processes in semi-arid regions: Using central USA as a case study, oral presentation to the International Workshop on Semi-arid Land Surface–Atmosphere Interaction, Lanzhou, China, 9–11 August 2007.

2006

- Gulden, L.E. and **Z.-L. Yang**, 2006: Incorporating plant-species variation in biogenic emission rates into regional weather and climate models, poster presented to the Eighth Conference on Atmospheric Chemistry, American Meteorological Society, Atlanta, Georgia, 29 January–2 February 2006.
- Gulden, L.E., Rodell, M, **Z.-L. Yang**, Niu, G.-Y., P.J. Yeh, and J.S. Famiglietti, 2006: Improving land-surface model hydrology: Is an explicit aquifer model better than a deeper soil profile? oral talk presented to American Geophysical Union 2006 Fall Meeting, San Francisco, CA, 11–15 December, 2006.
- Niu, G.-Y. and **Z.-L. Yang**, 2006: The Effects of Frozen Soil on Snowmelt Runoff and Soil Water Storage, poster presented to the 18th Conference on Climate Variability and Change and the 20th Conference on Hydrology, American Meteorological Society, Atlanta, Georgia, 29 January–2 February 2006.
- Niu, G.-Y and **Z.-L. Yang**, 2006: Assessing a land surface model's improvements with GRACE estimates, 2006 Western Pacific Geophysics Meeting, Beijing, China, 24–27 July 2006.
- Niu, G.-Y and **Z.-L. Yang**, R.E. Dickinson, L.E. Gulden, and H. Su, 2006: A Simple Groundwater Model (SIMGM) for use in Climate Models: The Impacts of Groundwater Dynamics on Soil Moisture and Evapotranspiration, 2006 Western Pacific Geophysics Meeting, Beijing, China, 24–27 July 2006.
- Song, J.H., L. E. Gulden, **Z.-L. Yang**, and D. T. Allen, 2006: The response of biogenic emissions to land-cover change and climate change, EPA Science Forum 2006 "Your Health, Your Environment, Your Future", Ronald Reagan Building and International Trade Center, Washington, DC. 16–18 May, 2006.
- Strassberg, G, Scanlon, B, G. Niu, and **Z.-L. Yang**, 2006: Comparison of Seasonal Water Storage Variations with Terrestrial Water Storage from the Gravity Recovery and Climate Experiment (GRACE) Over the High Plains Aquifer, oral talk presented to American Geophysical Union 2006 Fall Meeting, San Francisco, CA, 11–15 December, 2006.
- **Yang, Z.-L.** and L.E. Gulden, 2006: Issues in the Simulated Biogenic Emissions at a Regional Scale, 2006 Western Pacific Geophysics Meeting, Beijing, China, 24–27 July 2006.
- **Yang, Z.-L.** and G.-Y. Niu, 2006: Reducing the wintertime warm bias in NCAR GCMs through the use of a new snow cover fraction scheme, oral talk presented to the 18th Conference on Climate Variability and Change and the 20th Conference on Hydrology, American Meteorological Society, Atlanta, Georgia, 29 January–2 February 2006.

- **Yang, Z.-L.**, H. Su and G.-Y. Niu, 2006: Comparison of Two Approaches to Modeling Subgrid Snow Cover Variability, 2006 Western Pacific Geophysics Meeting, Beijing, China, 24–27 July 2006.
- Zhang, X.-P., G.-Y. Niu and **Z.-L. Yang**, 2006: Incorporating Stable Water Isotopes in the Community Land Model, 2006 Western Pacific Geophysics Meeting, Beijing, China, 24–27 July 2006.

2005

- Gulden, L.E., **Z.-L. Yang**, and G.-Y. Niu, 2005: Relative contribution of climate variability and vegetation phenology to biogenic emissions: Results from regional study in Texas, USA, poster presented to American Geophysical Union 2005 Fall Meeting, San Francisco, CA, 5–9 December, 2005.
- Knebl, M.R. and **Z.-L. Yang**, 2005: Use of High-Resolution Precipitation Products Derived from the Weather Research and Forecasting Model to Drive GIS-Based Hydrological Flood Inundation Modeling; Effects of Rainfall Error on Flood Accuracy, poster presented to American Geophysical Union 2005 Fall Meeting, San Francisco, CA, 5–9 December, 2005.
- Su, H., G.-Y. Niu, and **Z.-L. Yang**, 2005: Calibration of a Monthly Water Table-Runoff Scheme Representing Spatial Aggregation of Major Runoff Processes in Humid Watersheds of Illinois, poster accepted for presentation to American Geophysical Union 2005 Fall Meeting, San Francisco, CA, 5–9 December, 2005.
- **Yang, Z.-L.**, L.E. Gulden, and G.-Y. Niu, 2005: Sensitivity of biogenic emission estimates to uncertainties in land-cover datasets: An example from Texas, USA, oral talk presented to American Geophysical Union 2005 Fall Meeting, San Francisco, CA, 5–9 December, 2005.
- Zhang, X.-P. and **Z.-L. Yang**, 2005: Analyses on the factors influencing stable isotopes in precipitation in the southwestern China, poster accepted for presentation to American Geophysical Union 2005 Fall Meeting, San Francisco, CA, 5–9 December, 2005.

2004

- Knebl, M.R., **Z.-L. Yang**, and K.R. Hutchison, 2004: Derivation of a flood potential product using GIS and hydrological modeling: an investigation of the San Antonio summer flood of 2002, *84th AMS Annual Meeting*, American Meteorological Society, 11–15 January 2004, Seattle, WA.
- Niu, G.-Y. and **Z.-L. Yang**, 2004a: Improvements of the Community Land Model in the simulations of runoff, *84th AMS Annual Meeting*, American Meteorological Society, 11–15 January 2004, Seattle, WA.
- Niu, G.-Y. and **Z.-L. Yang**, 2004b: Impacts of fractional snow cover on surface air temperature in NCAR Community Atmosphere Model, *84th AMS Annual Meeting*, American Meteorological Society, 11–15 January 2004, Seattle, WA.
- Niu, G.-Y. and **Z.-L. Yang**, 2004c: Modeling the continental hydrology: The interplay between canopy interception and hill-slope runoff, 9th ASCE Aerospace Division International Conference on Engineering, Construction and Operations in Challenging Environments (Earth & Space 2004), League City, TX, March 7–10, 2004 (**invited**).
- Niu, G.-Y. and **Z.-L. Yang**, 2004d: The effects of vegetation canopy processes on snow surface energy and mass balances, poster presentation to American Geophysical Union 2004 Fall Meeting, San Francisco, CA, 13–17 December, 2004.
- Xia, Y., **Z.-L. Yang**, P.L. Stoffa, and M. K. Sen, 2004: Use of different hydrological variables and impacts of atmospheric forcing errors on optimization and uncertainty analysis of the CHASM surface model at a cold catchment, in *Proceedings of the 2nd international CAHMDA workshop on: The Terrestrial Water Cycle: Modelling and Data Assimilation Across Catchment Scales*, edited by

A.J. Teuling, H. Leijnse, P.A. Troch, J. Sheffield and E.F. Wood, pp. 124–127, Princeton, NJ, October 25–27, 2004.

- **Yang, Z.-L.** and G.-Y. Niu, 2004: The impacts of vegetation growth on the development of the North American monsoon system (NAMS), poster presentation to American Geophysical Union 2004 Fall Meeting, San Francisco, CA, 13–17 December, 2004.
- **Yang, Z.-L.**, G.-Y. Niu, and Q. Zeng, 2004: Parameterization of fractional snow cover in the NCAR Community Atmosphere Model, 9th ASCE Aerospace Division International Conference on Engineering, Construction and Operations in Challenging Environments (Earth & Space 2004), League City, TX, March 7–10, 2004 (**invited**).

2003

- Niu, G.-Y. and Z.-L. Yang, 2003: Evaluation of snow simulations from CAM2/CLM2, 83rd AMS Annual Meeting, American Meteorological Society, 9-13 February 2003, Long Beach, CA, Abstract Volume p. 157.
- Yang, Z.-L. and G.-Y. Niu, 2003: The impacts of fraction of precipitation as snow on snowpack hydrology and general circulation: A GCM study, 83rd AMS Annual Meeting, American Meteorological Society, 9-13 February 2003, Long Beach, CA, Abstract Volume pp. 217–218.

2002

- Niu, G.-Y. and Z.-L. Yang, 2002: Modeling crop growth using modified NCAR LSM 1.0, 13th Symposium on Global Change and Climate Variations, American Meteorological Society, 13–17 January 2002, Orlando, Florida, pp. J287–J289.
- Niu, G.-Y., and Z.-L. Yang, 2002: Effects of parameterizations of canopy processes on snow surface energy budgets, oral presentation at the Mississippi River Climate and Hydrology Conference, May 13–17, 2002, New Orleans, LA.
- Yang, Z.-L. and G.-Y. Niu, 2002a: Impacts of soil water freezing point on soil freeze-thaw cycles and runoff: A study using the Community Land Model (CLM), 13th Symposium on Global Change and Climate Variations, American Meteorological Society, 13–17 January 2002, Orlando, Florida, pp. J58–J60.
- Yang, Z.-L. and G.-Y. Niu, 2002b: Improving the representation of snow processes in global climate models, 13th Symposium on Global Change and Climate Variations, American Meteorological Society, 13–17 January 2002, Orlando, Florida, pp. J284–J286.
- Yang, Z.-L. and G.-Y. Niu, 2002c: Snow-Climate Interaction in the NCAR CCM3, oral presentation at the Mississippi River Climate and Hydrology Conference, May 13–17, 2002, New Orleans, LA.
- Yang, Z.-L. and G.-Y. Niu, 2002d: Effects of the snowfall rate parameterization on the snow mass and circulation, oral presentation at the WCRP Workshop on Determination of Solid Precipitation in Cold Climate Regions Fairbanks, Alaska, June 9–14, 2002 (**invited**).
- Yang, Z.-L., 2002: Modeling surface hydrology in CLM2, presented at the Land Model Working Group Meeting, National Center for Atmospheric Research, Bolder, CO., March 25–29, 2002 (**invited**).

2001

- Niu, G.-Y. and Z.-L. Yang, Validating a dynamic leaf model using the GCIP data, oral presentation to the 12th Symposium on Global Change and Climate Variations, 81st American Meteorological Society Meeting, Albuquerque, NM, January 14–18, 2001.

2000

- Gochis, D.J., W.J. Shuttleworth, R.A. Maddox, and Z.-L. Yang, Quantification of error in a pseudo regional climate simulation of the North American monsoon, oral presentation to Southwest Weather Symposium, Tucson, Arizona, September 21–22, 2000.

- Li, F., R.C. Bales, H.C. Hartmann, Z.-L. Yang, J. Kim, N.L. Miller, and S. Sorooshian, Evaluating seasonal snow simulations from a regional climate model in the western U.S. with high-elevation data sets, poster presentation to American Geophysical Union 2000 Fall Meeting, San Francisco, CA, 15–19 December, 2000.
 - Niu, G.-Y. and Z.-L. Yang, Validation and sensitivity tests of a new snow model: Variable Integrator of Snow Atmosphere processes (VISA), oral presentation to American Geophysical Union, Spring Meeting, Washington, D.C., May 30–June 3, 2000.
 - Xue, Y., K. Mitchel, S. Benjamin, J. Shuttleworth, Z.-L. Yang, and T. Smirnova, Coupled modeling within the GCIP program, 2000 Western Pacific Geophysical Meeting of AGU, Tokyo, June 27–30, 2000 (**invited**).
 - Yang, Z.-L. and G.Y. Niu, Snow-climate interaction in NCAR CCM3, oral presentation to the 15th Conference on Hydrology, American Meteorological Society Meeting, Long Beach, CA, January 9–14, 2000. [Abstract]
 - Yang, Z.-L., G.-Y. Niu, R.E. Dickinson and R.C. Bales, Modeling of the Snow Processes in the NCAR CCM3, oral and poster presentation to GEWEX Continental-scale International Project (GCIP) Principal Investigators' Meeting, Bolger Center, Potomac, MD, 27–28 March, 2000.
 - Yang, Z.-L., G.-Y. Niu, R.E. Dickinson and R.C. Bales, Modeling of the snow processes in the NCAR CCM3, poster in EOS/IWG Meeting, Tucson, AZ, 11–13 April, 2000.
 - Yang, Z.-L., G.-Y. Niu, R.E. Dickinson and M. Stieglitz, Parameterization of runoff production in Common Land Model, oral presentation to American Geophysical Union, Spring Meeting, Supplement, Washington, D.C., May 30–June 3, 2000.
 - Yang, Z.-L., Runoff and snow modeling, oral presentation to the CCSM Land Working Group Meeting, Breckenridge, CO., 27–30 June, 2000.
 - Yang, Z.-L., D. Gochis, W.J. Shuttleworth, and G.-Y. Niu, Sensitivity of the North American monsoon in CCM3 to the Pacific sea surface temperature variations, poster presentation to the 25th Climate Diagnostics and Prediction Workshop, IRI, Palisades, NY, 23–27 October, 2000.
 - Yang, Z.-L., Recent developments in land surface research and their applications in monsoon and global change studies, oral presentation to the International Conference & Young Scientist Workshop on Asia Monsoon Environmental System and Global Change (AMESG), Nanjing, China, 15–17 November, 2000 (invited).
 - Yang, Z.-L., The role of land surface processes in the climate system, lecture at the Department of Atmospheric Sciences, Nanjing University, China, 18 November, 2000 (**invited**).
- 1999**
- Gochis, D., Z.-L. Yang and W.J. Shuttleworth, CCM3 versus observed climatology of the North American Monsoon, oral presentation to American Geophysical Union, Fall Meeting, San Francisco, CA, 13–17 December, 1999.
 - Gochis, D., W.J. Shuttleworth and Z.-L. Yang, High resolution observations of the North American Monsoon, presentation to the 24th Annual Climate Diagnostics and Prediction Workshop, The University of Arizona, Tucson, AZ, 1–5 November, 1999.
 - Niu, G.-Y. and Z.-L. Yang, Snow simulations from a three-layer snow mass and energy model coupled with NCAR CCM3/LSM, presentation to American Geophysical Union, Fall Meeting, San Francisco, CA, 13–17 December, 1999.
 - Shuttleworth, W.J., E.J. Burke, Z.-L. Yang, M.A. Arain and S.L. Mullen, Testing aggregation rules for surface parameters using remotely sensed land cover data and the NCAR Community Climate Model (CCM3) coupled to BATS, oral presentation to American Geophysical Union, Fall Meeting, San Francisco, CA, 13–17 December, 1999 (**invited**).
 - Yang, Z.-L., W.J. Shuttleworth and D. Gochis, Modeling of the North American monsoon in NCAR CCM3, oral presentation to 24th Annual Climate Diagnostics and Prediction Workshop, The University of Arizona, Tucson, AZ, 1–5 November, 1999.

- Yang, Z.-L. and G.-Y. Niu, Spatial and temporal analysis of water fluxes in CLM: test against Red-Arkansas river basin data, oral presentation to Common Land Model Workshop, COLA, Washington, D.C., 8–9 November, 1999.
- Yang, Z.-L., Comparing snow simulations from NCAR CCM3 coupled with two different land surface parameterizations: BATS and LSM, seminar at Department of Atmospheric Sciences, Colorado State University, 18 June, 1999.
- Yang, Z.-L., G.-Y. Niu, R.E. Dickinson and R.C. Bales, Evaluating NCAR CCM3 snow simulations, oral presentation to GEWEX Continental-scale International Project (GCIP) Principal Investigators Meeting, The Inn and Conference Center, University of Maryland University College, College Park, MD, 17–18 May, 1999.
- Yang, Z.-L., G.Y. Niu and R.E. Dickinson, Comparing snow simulations from NCAR LSM and BATS using PILPS 2d data, oral presentation to 14th Conference on Hydrology, American Meteorological Society Meeting, Dallas, TX, 10–15 January, 1999. [Abstract]

1998

- Yang, Z.-L., Land surface processes, lecture at the Advanced Training Course on the Application of Regional Climate Model for Asia, Beijing, China, November 23–December 2, 1998 (**invited**).
- Yang, Z.-L., R.E. Dickinson, M. Shaikh, X. Gao, R.C. Bales, S. Sorooshian and J.M. Jin, Simulation of snow mass and extent in global climate models, oral presentation to International Conference on Snow Hydrology: The Integration of Physical, Chemical and Biological Systems, Brownsville, Vermont, 6–9 October, 1998. [Abstract]
- Yang, Z.-L., Y. Dai, R.E. Dickinson and W.J. Shuttleworth, Factors controlling the phase and amplitude of ground heat fluxes, oral presentation to the GCIP Mississippi River Climate Conference, St. Louis, 8–12 June, 1998.

1997

- Arain, A.M., Z.-L. Yang, and W.J. Shuttleworth, Deriving vegetation parameters in global climate models from remotely sensed land cover classes, poster presentation to American Geophysical Union, Fall Meeting, San Francisco, CA, December 8–12, 1997.
- Miller, R.L., R.E. Dickinson and Z.-L. Yang, Investigating parameterizations for the sulfate indirect effect, poster presentation to American Geophysical Union, Fall Meeting, San Francisco, CA, December 8–12, 1997.
- Yang, Z.-L., M. Shaikh, A. Hahmann, R.E. Dickinson, and R.C. Bales, Modeling snow processes on GCM scales, oral presentation to American Geophysical Union, Fall Meeting, San Francisco, CA, December 8–12, 1997 (**invited**).

1996

- Arain, M.A., J. Michaud, W.J. Shuttleworth, Z.-L. Yang and A.J. Dolman, Mapping vegetation parameters with remotely sensed land surface covers and FIFE- and ABRACOS-validated aggregation rules, oral presentation to American Geophysical Union, Spring Meeting, Baltimore, MD, 1996 (**invited**).
- Yang, Z.-L., Improving surface hydrology in global climate models, lecture at the Atmospheric Sciences Center, Desert Research Institute, Reno, Nevada, May 9, 1996 (**invited**).
- Yang, Z.-L., R.E. Dickinson, A. Robock and K.Y. Vinnikov, On validation of the snow sub-model of the Biosphere Atmosphere Transfer Scheme with Russian snow cover and meteorological observational Data, poster presentation to Second International Scientific Conference on the Global Energy and Water Cycle, National Academy of Sciences, Washington, D.C., 17–21 June 1996.

1995

- Shuttleworth, W.J., M.A. Arain, J. Michaud, J. Garatuza, Z.-L. Yang and A.J. Dolman, Mapping vegetation parameters with remotely sensed landcovers and FIFE- and ABRACOS-validated aggregation rules, oral presentation to American Geophysical Union, Spring Meeting, Baltimore, MD, May 29–June 2, 1995.

- Unland, H., P. Houser, Z.-L. Yang and W.J. Shuttleworth, Surface flux measurement and modeling at a semiarid Sonoran desert site, oral presentation to IUGG XXI General Assembly, Boulder, CO, July 3–14, 1995.
- Yang, Z.-L., R.E. Dickinson, A. Robock and K.Y. Vinnikov, On validation of the snow sub-model of the Biosphere Atmosphere Transfer Scheme with Russian snow cover and meteorological observational Data, accepted for oral presentation to International GEWEX Workshop on Cold-Season/Region Hydrometeorology, Canadian Geophysical Union, The Banff Centre, Banff, Alberta, Canada, May 22–26, 1995.
- Yang, Z.-L., Evaluation and testing of land-surface models, lecture at the Department of Civil Engineering, Texas A&M University, College Station, Texas, May 22, 1995 (**invited**).
- Yang, Z.-L., Improving surface hydrology in global climate models, lecture at the Department of Geography and Earth Resources, and Department of Plants, Soils and Biometeorology, Utah State University, Logan, Utah, August 28, 1995 (**invited**).
- Yang, Z.-L. and R.E. Dickinson, Validation of soil moisture simulations in BATS model using HAPEX-MOBILHY data, oral presentation to IUGG XXI General Assembly, Boulder, CO, July 3–14, 1995.
- Yang, Z.-L., R.E. Dickinson and W.J. Shuttleworth, Validation of soil moisture simulations for different surfaces using ABRACOS, ARME, HAPEX-MOBILHY and Russian data, oral presentation to XX General Assembly of the European Geophysical Society (EGS), Hamburg, Germany, April 3–7, 1995.

1994

- Yang, Z.-L. and R.E. Dickinson, Intercomparing soil moisture simulations with one-dimensional meteorological model coupled with different land-surface schemes, oral presentation to American Geophysical Union, Spring Meeting, Baltimore, MD, May 23–37, 1994.
- Yang, Z.-L. and R.E. Dickinson, On the interannual variability of the land surface hydrology and implications for drought: Analysis of results from a climatic model BATS-CCM2, oral presentation to American Geophysical Union, Fall Meeting, San Francisco, CA, December 5–9, 1994.

1993

- Henderson-Sellers, A., Z.-L. Yang, A.J. Pitman, and R.E. Dickinson, PILPS (The Project for Intercomparison of Land-surface Parameterization Schemes) Phase One, oral presentation to Fourth International Conference on Southern Hemisphere Meteorology and Oceanography, Hobart, Australia, March 29–April 2, 1993.
- Yang, Z.-L., The impact of pre-existing soil moisture content on Australian climate with an advanced land surface model coupled with the BMRC AGCM, poster presentation to Fourth International Conference on Southern Hemisphere Meteorology and Oceanography, Hobart, Australia, March 29–April 2, 1993.
- Yang, Z.-L., Preliminary study of spin-up processes with the PILPS Phase 1 data, oral presentation to PILPS Session, J1.2, GEWEX Continental Scale International Project (GCIP), IAMAP/IAHS Symposium, Yokohama, Japan, July 11–23, 1993.
- Yang, Z.-L. and A.J. Pitman, Land-surface parameterizations for climate models: A new method for composite fluxes, oral presentation to Session J3, Exchange Processes at the Land-Surface for a Range of Space and Time Scales, Joint IAHS/IAMAP Symposium, Yokohama, Japan, July 11–23, 1993.
- Yang, Z.-L., A.J. Pitman and A. Henderson-Sellers, Implementing an advanced land surface scheme into an AGCM: methodology and results, poster presentation to Session J3, Exchange Processes at the Land-Surface for a Range of Space and Time Scales, Joint IAHS/IAMAP Symposium, Yokohama, Japan, July 11–23, 1993.
- Yang, Z.-L., A. Henderson-Sellers, R.E. Dickinson and A.J. Pitman, Intercomparison of two land-surface schemes BATS and BEST using the PILPS Phase 1 data, oral presentation to PILPS Session,

J1.2, GEWEX Continental Scale International Project (GCIP), IAMAP/IAHS Symposium, Yokohama, Japan, July 11–23, 1993.

- Yang, Z.-L. and R.E. Dickinson, Validating Biosphere-Atmosphere Transfer Scheme with Russian soil moisture and meteorological observations, oral presentation to American Geophysical Union, Fall Meeting, San Francisco, CA, December 6–10, 1993.

1992

- Pitman, A.J. and Z.-L. Yang, Bare Essentials of Surface Transfer, oral presentation to the Project for intercomparison of land surface parameterization schemes, Columbia, Maryland, June, 1992.

1991

- Pitman, A.J., Z.-L. Yang and A. Henderson-Sellers, Incorporation of a numerical land-surface scheme into global and limited area climate models, poster presentation to IGBP Symposium M5 (Parameterization of complex terrain), Vienna, Austria, August, 1991.
- Yang, Z.-L., A. Henderson-Sellers and F. Giorgi, Drought conditions and Australian wintertime precipitation, oral presentation to International Conference on the Physical Causes of Drought and Desertification, Melbourne University, Australia, December 9–13, 1991.

1990

- Yang, Z.-L., Testing the Bare Essentials of Surface Transfer (BEST) for semi-arid regions, oral presentation to the first international conference on Degradation of Vegetation in Semi-arid Areas: Climate Impacts and Implications at Macquarie University, Sydney, Australia, January 29–31, 1990.

12.2

Seminar, Colloquia and Workshop Talks

- Yang, Z.-L., G.-Y. Niu, and E. Rosero, 2009: Multi-physics options; model sensitivity and parameters interaction, presented at the NCAR CCSM Land Model Working Group and Biogeochemistry Working Group Meetings, Boulder, Colorado, USA, 30 March–1 April, 2009.
- Yang, Z.-L., 2009: Projected climate change in Texas and its coastal environment, presented at the NASA Interdisciplinary Science project team meeting, Corpus Christi, Texas, USA, 19 March, 2009.
- Yang, Z.-L., 2009: Why Is Land at the Central Stage for Weather and Climate? Seminar at Department of Agronomy, Purdue University, 12 January, 2009 (**invited**).
- Yang, Z.-L., 2008: Why Is Land at the Central Stage for Weather and Climate? Seminar at the Climate Forum, Jackson School of Geological Sciences, University of Texas at Austin, 6 October, 2008.
- Yang, Z.-L., 2008: New Directions in Land Surface Research, Seminar at Shanghai Meteorological Bureau, Shanghai, China, 18 July, 2008 (**invited**).
- Yang, Z.-L., 2008: Assessing Three Different Methodologies in Climate Dynamical Downscaling, Seminar at Shanghai Meteorological Bureau, Shanghai, China, 16 July, 2008 (**invited**).
- Yang, Z.-L., 2008: Modeling Land–Atmosphere Interaction in the North American Monsoon Region, Seminar at Shanghai Meteorological Bureau, Shanghai, China, 16 July, 2008 (**invited**).
- Yang, Z.-L., 2008: Biogenic Emissions and Air quality, Seminar at Shanghai Meteorological Bureau, Shanghai, China, 15 July, 2008 (**invited**).
- Yang, Z.-L., 2008: Flood Modeling, Seminar at Shanghai Meteorological Bureau, Shanghai, China, 15 July, 2008 (**invited**).
- Yang, Z.-L., 2008: Environmental Impacts of Global Climate Change: An Integrated Framework and Some Case Studies, Seminar at Shanghai Normal University, Shanghai, China, 14 July, 2008 (**invited**).
- Yang, Z.-L., 2008: Biogenic Emissions, Air quality, Climate change, and Regional Climate Modeling, Seminar at Fudan University, Shanghai, China, 3 July, 2008 (**invited**).

- Yang, Z.-L., 2008: Research Highlights in The Land Environment and Atmospheric Dynamics (LEAD) Group, Seminar at Zhangjiajie Meteorological Bureau, Zhangjiajie, Hunan Province, China, 27 June, 2008 (**invited**).
- Yang, Z.-L., 2008: New Directions in Land Surface Research, Seminar at the National Climate Center, China Meteorological Administration Beijing, China, 11 June, 2008 (**invited**).
- Yang, Z.-L., 2008: Climate System Sciences at the Jackson School, Seminar at the START Regional Center for Temperate East Asia, Institute of Atmospheric Physics, Chinese Academy of Sciences, Beijing, China, 10 June, 2008 (**invited**).
- Yang, Z.-L., 2008: New Directions in Land Surface Research, Seminar at the START Regional Center for Temperate East Asia, Institute of Atmospheric Physics, Chinese Academy of Sciences, Beijing, China, 10 June, 2008 (**invited**).
- Yang, Z.-L., 2008: Research highlights in the Land Environment and Atmospheric Dynamics (LEAD) Group, presented to the UCAR PACUR meeting, Austin, Texas, 15 April, 2008 (**invited**).
- Yang, Z.-L., 2008: An Integrated Simulation Framework for Continental Water Dynamics Modeling and Forecasting, presented at the NSF Community Hydrological Modeling Development panel meeting, Washington, D.C., March 26–27, 2008 (**invited**).
- Yang, Z.-L., G.-Y. Niu, and H. Su, 2008: Modeling Snow in the Noah LSM, presented at the NCAR Colorado Headwaters Workshop panel meeting, Boulder, Colorado, USA, March 19–20, 2008 (**invited**).
- Yang, Z.-L., L.E. Gulden, and E. Rosero, 2008: How can we use sophisticated evaluation methods to guide CLM development, presented at the NCAR Land Model Working Group Meeting, Boulder, Colorado, USA, 20–22 February, 2008.
- Yang, Z.-L., G.-Y. Niu, and H. Su, 2008: Estimating continental-scale SWE using CLM, EnKF, multi-sensor satellite products, presented at the NCAR Land Model Working Group Meeting, Boulder, Colorado, USA, 20–22 February, 2008.
- Yang, Z.-L., 2007: Challenges in Downscaling Global Climate Information for Regional Water Resources and Air Quality Studies, presented at The User and the GEOSS Architecture XVI “Regional Decisions for Climate Change” OGC Plenary – Boulder, Colorado, USA, 21–22 September, 2007 (**invited keynote**).
- Yang, Z.-L., 2007: Geology Meets Meteorology: Interaction of the Land Surface and the Atmosphere, Department of Geological Sciences Technical Talk, The University of Texas at Austin, 6 September, 2007.
- Yang, Z.-L., 2007: Assessing the Skill of Climate Dynamic Downscaling, presented at the START Regional Research Center for Temperate East Asia (REC-TEA), Institute of Atmospheric Physics, Chinese Academy of Sciences, Beijing, China, 7 August, 2007 (**invited**).
- Yang, Z.-L., 2007: One Group, Two Models, presented at the China Meteorological Administration Institute of Desert Meteorology, Urumqi, China, 15 August, 2007 (**invited**).
- Yang, Z.-L., 2007: Biogenic Emissions, Air Quality, and Climate Change, presented at the State Key Laboratory of Atmospheric Boundary Layer Physics and Atmospheric Chemistry (LAPC), Institute of Atmospheric Physics, Chinese Academy of Sciences, Beijing, China, 20 August, 2007 (**invited**).
- Yang, Z.-L., 2007: One Group, Two Models, presented at the International Center for Climate and Environment Sciences (ICCES), Institute of Atmospheric Physics, Chinese Academy of Sciences, Beijing, China, 21 August, 2007 (**invited**).
- Yang, Z.-L., 2007: Assimilating MODIS Snow Cover Using EnKF and CLM, presented at the National Satellite Meteorological Center, China Meteorological Administration, Beijing, China, 23 August, 2007 (**invited**).
- Yang, Z.-L., 2007: Review of Land Surface Research, presented at the National Climate Center, China Meteorological Administration, Beijing, China, 23 August, 2007 (**invited**).

- Yang, Z.-L., 2007: Noah development at UT-Austin, presented at the Unified Noah LSM development and improvement workshop at NCAR, Boulder, Colorado, 25–26 July, 2007.
- Yang, Z.-L. and G.-Y. Niu, 2007: Modeling irrigation in CLM, Joint Session Land, Chemistry, Biochemistry Working Groups, Boulder, Colorado, 26–28 February, 2007.
- Niu, G.-Y. and Z.-L. Yang, 2007: Snow cover fraction and snow interception, CCSM Land Working Group Meeting, Colorado, 26–28 February, 2007.
- Yang, Z.-L., 2006: Developing a Regional Environmental Prediction System for Central and Eastern Texas. University of Texas at San Antonio Department of Earth and Environmental Science Seminar. 27 October, 2006 (**invited**).
- Yang, Z.-L., 2006: Modeling Regional-to-Global-Scale Land–Atmosphere Interaction, Seminar at the National Climate Center, China Meteorological Administration, Beijing, China, 2 August, 2006 (**invited**).
- Yang, Z.-L., 2006: Progress in Land Surface Modeling, Seminar at the National Satellite Meteorological Center, China Meteorological Administration, Beijing, China, 1 August, 2006 (**invited**).
- Yang, Z.-L., 2006: Land Surface Hydrology and Climate Modeling Program at The University of Texas at Austin, Seminar at the START Regional Center for Temperate East Asia, Institute of Atmospheric Physics, Chinese Academy of Sciences, Beijing, China, 26 July, 2006.
- Yang, Z.-L., 2006: Modeling Regional-to-Global-Scale Land–Atmosphere Interaction, Texas A&M University Department of Atmospheric Sciences Seminar. 21 February, 2006 (**invited**).
- Yang, Z.-L., G.-Y. Niu and R.E. Dickinson, 2006: Modeling Runoff in CLM, NCAR CCSM Land Model Working Group Meeting Presentation, 27 March, 2006 (**invited**).
- Yang, Z.-L., H. Su and G.-Y. Niu, 2006: Modeling Frozen Soil and Subgrid Snow Cover in CLM, NCAR CCSM Land Model Working Group Meeting Presentation, 28 March, 2006 (**invited**).
- Yang, Z.-L., 2005: Relationship between Vegetation Growth and Precipitation in the Southwestern United States and Mexico, Earth System Science Interdisciplinary Center, University of Maryland, 6 June, 2005 (**invited**).
- Yang, Z.-L., 2004: Regional hydrologic study using coupled meso-scale meteorological and land-surface hydrological models, NSF CUAHSI Meeting, Bureau of Economic Geology, The University of Texas at Austin, 23 November, 2004.
- Yang, Z.-L., G.-Y. Niu, and Q. Zeng, 2004: Parameterization of snow processes in weather and climate prediction models, EOS Snow and Ice Products Workshop, 16–17 November, 2004, Raytheon Building, Landover, MD.
- Yang, Z.-L., G.-Y. Niu, and Q. Zeng, 2004: Snow albedo, NASA IDS Team Meeting, 15 November, 2004, University of Maryland Inn and Conference Center, MD.
- Yang, Z.-L., 2004: Relationships between precipitation and vegetation in the southwestern United States and Mexico, Department of Geological Sciences Technical Talk, The University of Texas at Austin, 21 September, 2004.
- Yang, Z.-L., G.-Y. Niu, and Q. Zeng, 2004: Parameterization of snow cover fraction in climate and weather prediction models, 2004 GAPP PIs Meeting, 30–31 August 2004, Boulder, CO.
- Yang, Z.-L. and G.-Y. Niu, 2004: Understanding and simulation of the effects of vegetation on North American Monsoon precipitation, 2004 GAPP PIs Meeting, 30–31 August 2004, Boulder, CO.
- Yang, Z.-L., G.-Y. Niu, and Q. Zeng, 2004: New results on snow and runoff research, *NCAR Land Working Group Meeting, 9th Annual CCSM Workshop*, 7–9 July 2004, Santa Fe, NM.
- Yang, Z.-L., D. Allen, and B. Parmenter, 2004: Impacts of Climate Change and Land Cover Change on Biogenic Volatile Organic Compounds (BVOCs) Emissions in Texas, 24–25 May 2004, Research Triangle Park, NC.

- Niu, G.-Y. and Z.-L. Yang, 2003: Evaluation of three topographic-based runoff schemes in a land surface model, *NCAR Land Working Group Meeting, 8th Annual CCSM Workshop*, 25–26 February 2003, Boulder, CO.
- Niu, G.-Y., Z.-L. Yang, Y. Jin and C.B. Schaaf, 2002: Modeled wintertime land surface albedo in comparison with MODIS observations, *MODIS Workshop on Land surface Radiation Budget Variables and Snow and Ice Products*, 21–22 October, 2002, Boston.
- Niu, G.-Y., Z.-L. Yang, 2002: The performances of CLM2 in PILPS2E, *CCSM Land Model Working Group Meeting, Seventh Annual CCSM Workshop*, The Village at Breckenridge, June 26, 2002.
- Niu, G.-Y., Z.-L. Yang, 2002: Snow surface albedo proposed as a function of soot content and leaf litter. *CCSM Land Model Working Group Meeting, Seventh Annual CCSM Workshop*, The Village at Breckenridge, June 26, 2002.
- Yang, Z.-L. and G.-Y. Niu, 2003: Modeling Hydrological Processes in the Coupled Hydrological and Meteorological Models, *Integrated Watershed Sciences Symposium: Bridging the Gap between Science and Application*, Environmental Science Institute, University of Texas at Austin, November 12, 2003.
- Yang, Z.-L., 2003: An integrated approach to studying atmosphere, surface water and groundwater interactions, The Hydrogeology Brownbag Seminar, UT-Austin, September 19, 2003.
- Yang, Z.-L. and G.-Y. Niu, 2003: Simulation of runoff in CAM2/CLM2. *CCSM Land Model Working Group Meeting, Eighth Annual CCSM Workshop*, The Village at Breckenridge, June 24, 2003 (**invited**).
- Yang, Z.-L. and G.-Y. Niu, 2002: Effects of the snowfall rate parameterization on the snow mass and circulation, oral presentation at the WCRP Workshop on Determination of Solid Precipitation in Cold Climate Regions Fairbanks, Alaska, June 9–14, 2002 (**invited**).
- Yang, Z.-L. , 2002: “Climate Research at Department of Geological Sciences. Jackson School of Geosciences,” Center for Space Research, University of Texas at Austin, 25 November, 2002 (**invited**).
- Yang, Z.-L., 2002: Modeling surface hydrology in CLM2, presented at the *Land Model Working Group Meeting*, National Center for Atmospheric Research, Bolder, CO., March 25–29, 2002 (**invited**).
- Yang, Z.-L. , 2002: “Modeling snow cover for global change research,” Department of Earth System Sciences, University of California, Irvine, 12 March, 2002 (**invited**).
- Yang, Z.-L. , 2002: “Climate Research at Department of Geological Sciences,” Environmental Science Institute Outreach Lecture Series, University of Texas at Austin, 25 January, 2002.
- Yang, Z.-L. , 2001: “Modeling snow, vegetation and runoff processes for global change research,” Department of Soil and Atmospheric Sciences, University of Missouri at Columbia, Missouri, 20 April, 2001 (**invited**).
- Yang, Z.-L. , 2001: “Improving the representation of snow processes in global climate models,” Department of Geological Sciences, The University of Texas at Austin, 21 March, 2001 (**invited**).
- Yang, Z.-L. , 2000: “Recent developments in land surface research and their applications in monsoon and global change studies,” International Conference & Young Scientist Workshop on Asia Monsoon Environmental System and Global Change (AMESG), Nanjing, China, 15–17 November, 2000 (**invited**).
- Yang, Z.-L. , 2000: “The role of land surface processes in the climate system,” Department of Atmospheric Sciences, Nanjing University, China, 18 November, 2000 (**invited**).
- Yang, Z.-L. , 1999: “Comparing snow simulations from NCAR CCM3 coupled with two different land surface parameterizations: BATS and LSM,” Department of Atmospheric Sciences, Colorado State University, 18 June, 1999 (**invited**).
- Yang, Z.-L. , 1998: “Land-Surface Processes,” Advanced Training Course on the Application of Regional Climate Model for Asia, Beijing, China, 23 November–2 December, 1998 (**invited**).

- Yang, Z.-L. , 1997: “Modeling snow processes on GCM scales,” AGU Fall Meeting, San Francisco, 8–12 December, 1997 (**invited**).
- Yang, Z.-L. , 1996: “Improving surface hydrology in global climate models,” Desert Research Institute, Reno, Nevada, 9 May, 1996 (**invited**).
- Yang, Z.-L. , 1995: “Improving surface hydrology in global climate models,” Department of Geography and Earth Resources, and Department of Plants, Soils and Biometeorology, Utah State University, Logan, Utah, 28 August, 1995 (**invited**).
- Yang, Z.-L. , 1995: “Evaluation and testing of land-surface models,” Department of Civil Engineering, Texas A&M University, College Station, Texas, 22 May, 1995 (**invited**).

13. Professional Services

13.1 Conference Chair Positions

- Co-Convener, “Everything, Everywhere, Every Time: Advances in High-resolution Data Acquisition and Their Integration Into High-Fidelity Hydrologic Models”, American Geophysical Union (AGU) 2009 Fall Meeting.
- Conference Chair, “Climate Change Impacts on Texas Water” Conference, Austin, Texas, 28–30 April, 2008.
- Co-Convener, “Interactions of the Groundwater-Land Surface-Atmosphere System: Observations, Theory and Modeling from Local to Global Scale”, American Geophysical Union (AGU) 2007 Fall Meeting.
- Session Chair, “International Workshop on Semi-arid Land Surface–Atmosphere Interaction”, Lanzhou, China, 9–11 August 2007.
- Organizer, “Land–Atmosphere Interactions”, 21st Conference on Hydrology, American Meteorological Society 87th Annual Meeting, San Antonio, Texas, 14–18 January 2007.
- Convener, “Land Surface Processes: Observation, Theory and Modeling”, Western Pacific Geophysics Meeting, 24–27 July, 2006, Beijing.
- Convener, “Snow and Ice in the Earth System I (oral) and II (posters)”, American Geophysical Union (AGU) 2002 Fall Meeting.
- Session Chair, “Land–Atmosphere Interaction,” 9th ASCE Aerospace Division International Conference on Engineering, Construction and Operations in Challenging Environments (Earth & Space 2004), League City, TX, March 7–10, 2004.

13.2 Workshops and Specialized Conference Program Committees

- Member of Steering Committee, “Climate Change Impacts on Texas Water” Conference, Austin, Texas, 28–30 April, 2008.
- Panel Member at the NSF Community Hydrological Modeling Development panel meeting, Washington, D.C., March 26–27, 2008.
- Panel Member at the NCAR Colorado Headwaters Workshop panel meeting, Boulder, Colorado, USA, March 19–20, 2008.
- Member of Organizing Committee for the NCAR Biosphere-atmosphere Exchange of Aerosols within Cloud, Carbon and Hydrologic cycles, including Organics & Nitrogen (**BEACHON**) Program, 2007–present.
- Member of National Center for Atmospheric Research–Community Climate System Model–Land Surface Model Working Group, 1999–present.

- Technical Committee member, International Conference & Young Scientist Workshop on Asia Monsoon Environmental System and Global Change (AMESG), Nanjing, China, 15–17 November, 2000.
- Member of TEACOM Regional Climate Model Steering Committee, 2000.
- Member, Steering Committee for Snow Model Intercomparison Project, International Commission on Snow and Ice, 1998–present.

13.3 Journal, Conference, and Book Reviewing

Reviewer of journals:

- *Journal of Climate*
- *Climate Dynamics*
- *Water Resources Research*
- *Journal of Hydrometeorology*
- *Bulletin of American Meteorological Society*
- *Journal of Geophysical Research–Atmospheres*
- *Journal of Geophysical Research–Biogeosciences*
- *Journal of Meteorological Society of Japan*
- *Geophysical Research Letters*
- *Ecological Applications*
- *Global and Planetary Change*
- *Global Biogeochemical Cycles*
- *International Journal of Climatology*
- *Journal of Applied Meteorology*
- *Journal of Hydrology*
- *Earth Interactions*
- *Environmental Science & Technology*
- *Australian Meteorological Magazine*
- *Climate Research*
- *Theoretical and Applied Climatology*

Reviewer, the Intergovernmental Panel on Climate Change (IPCC) 1999 (Third) and 1995 (Second) Scientific Assessment of Climate Change

13.4 Grant Proposal Reviewing

Reviewer of grant proposals:

- National Science Foundation Programs: Climate Dynamics, Hydrologic Sciences
- National Aeronautics & Space Administration, Land-surface Hydrology Program
- National Oceanic & Atmospheric Administration, Office for Global Change
- Natural Sciences and Engineering Research Council of Canada, Discovery Grant

Proposals Review Panel (1994, 2002): National Oceanic & Atmospheric Administration, Global Energy and Water Cycle Experiment (GEWEX).

NASA Water Management Review Panel (2007).

13.5 Other Service

- Contributor, GEWEX America Prediction Project Science Plan for 2001.
- Contributor, GEWEX Continental International Project Science Plan, 1997–2000.

- Invited External Examiner for Ph.D. student Paul A. Bartlett at Queens University, Canada, November 2001.