

# Curriculum Vitae

Dan Li

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## RESEARCH INTERESTS

- ◆ Urban Climate and Urban Hydrology
- ◆ Boundary Layer Meteorology
- ◆ Environmental Fluid Mechanics and Turbulence
- ◆ Multi-Scale Numerical Modeling
- ◆ Hydrometeorology and Micrometeorology
- ◆ Land-Atmosphere Interaction

## EDUCATION & EMPLOYMENT

**2005-2009:** B.E., Department of Hydraulic Engineering, Tsinghua University, China

**2009-2013:** Ph.D., Department of Civil and Environmental Engineering (with a certificate from the Woodrow Wilson School of Public and International Affairs), Princeton University, USA

**2013-present:** Postdoctoral Research Associate, Program of Atmospheric and Oceanic Sciences, Princeton University, USA

**2013-present:** Visiting Scientist, Geophysical Fluid Dynamics Laboratory, Princeton, USA

## HONORS & AWARDS

- ◆ National Award for Outstanding Students in Hydraulic Engineering, China 2009
- ◆ Graduate Student Fellowship, Princeton University 2009
- ◆ Science, Technology, Environmental Policy Fellowship, Princeton University 2011
- ◆ Princeton Energy and Climate Scholars, Princeton University 2012
- ◆ Wu Prize for engineering graduate students who have performed at the highest level as scholars and researchers, Princeton University 2012
- ◆ Outstanding Student Paper Award, American Geophysical Union 2012
- ◆ Visitor Funding, National Center for Atmospheric Research 2013
- ◆ Chinese Government Award for Outstanding Students Abroad 2014

## PUBLICATIONS

1. **Li, D.\***, G. Katul, S. Zilitinkevich (2015), Comparing the Energy- and Flux-Budget (EFB) and Co-Spectral Budget (CSB) models for stably stratified geophysical flows. *Bound. Layer Meteorol.* (in review)
2. **Li, D.\***, G. Katul, and P. Gentine (2015), The  $k^{-1}$  Scaling of temperature spectra in atmospheric surface layer flows, *Q. J. Roy. Meteor. Soc.* (in review).
3. Assouline, S., **D. Li\***, S. Tyler, J. Tanny, S. Cohen, E. Bou-Zeid, M. Parlange, G. Katul (2015), On the variability of the Priestley-Taylor coefficient over water bodies. *Water Resour. Res.*, (in review)
4. Zhang, Y., Z. Pan, Z. Gao\*, **D. Li** and B. Wan (2015), Relative impacts of changing climate mean versus variance on temperature extremes in China, *J. Geophys. Res.: Atmospheres* (in revision).
5. Banerjee, T.\* , **D. Li** , J-Y Juang, G. Katul (2015), A spectral budget model for the longitudinal turbulent velocity in the stable atmospheric surface layer. *J Atmos Sci.* (in revision)
6. **Li, D.\***, G. G. Katul, and E. Bou-Zeid (2015), Turbulent Energy Spectra, Momentum and Heat Flux Co-spectra in Stable Atmospheric Surface Layers, *Bound. Layer Meteorol.* (in press).
7. Sun, K., **D. Li\***, L. Tao, Z. Zhao, and M. A. Zondlo (2015), Quantifying the Influence of Random Errors in Turbulence Measurements on Scalar Similarity in the Atmospheric Surface Layer, *Bound. Layer Meteorol.* (in press).
8. **Li, D.\***, G. G. Katul and S. Zilitinkevich (2015), Revisiting the Turbulent Prandtl Number in an Idealized Atmospheric Surface Layer, *J Atmos Sci.* (in press).
9. **Li, D.**, T. Sun\*, M. Liu, L. Yong, Z. Gao, L. Wang (2015): Contrasting responses of urban and rural surface energy budgets to heat waves explain synergies between urban heat islands and heat waves, *Environ. Res. Lett.*, (in press).
10. Zhang, N., Z. Gao\*, **D. Li** and Y. Liu (2015), Sensitivity of Climate Models to the Critical Richardson Number in the Boundary Layer Parameterization, *J. Geophys. Res.: Atmospheres* (in press).
11. Li, Y., Z. Gao\*, **D. Li.**, F. Chen, Y. Yang, L. Sun (2015), An update of non-iterative solutions for surface fluxes under unstable conditions, *Bound. Layer Meteorol.* (in press).
12. Chen, C., **D. Li**, Z. Gao\*, J. Tang, Y. Gao, X. Guo, L. Wang, and B. Wan (2015), Seasonal and Inter-annual Variations of Sensible heat, Water vapor and CO<sub>2</sub> Fluxes over a Rice-wheat Rotation System in North China Plain, *Adv. Atmos. Sci.* (in press).
13. Yang, W., **D. Li**, T. Sun\*, and G. H. Ni (2015), Saturation-excess and Infiltration-excess Runoff on Green Roofs, *Ecol Eng*, 74, 327–336.
14. Cong, Z.\* , X. Zhang, **D. Li**, H. Yang and D. Yang (2015), Understanding Hydrological Trends by

- Combining the Budyko Hypothesis and a Stochastic Soil Moisture model, *Hydrol. Sci. J.* 60(1) 145-55.
15. Wang, L., Z. Gao<sup>\*</sup>, S. Miao, X. Guo, T. Sun, M. Liu, and **D. Li** (2015), Contrasting Characteristics of the Surface Energy Balance between the Urban and Rural Areas of Beijing, China, *Adv. Atmos. Sci.* 32(4) 505-14 .
  16. **Li, D.<sup>\*</sup>**, and E. Bou-Zeid (2014), Quality and Sensitivity of High-resolution Numerical Simulation of Urban Heat Islands, *Environ. Res. Lett.*, 9(5), 055001.
  17. **Li, D.<sup>\*</sup>**, E. Bou-Zeid, and M. Oppenheimer (2014), The Effectiveness of Cool and Green roofs as Urban Heat Island Mitigation Strategies, *Environ. Res. Lett.*, 9(5), 055002.
  18. **Li, D.<sup>\*</sup>** (2014), Assessing the Impact of Interannual Variability of Precipitation and Potential Evaporation on Evapotranspiration, *Adv. Water Resour.*, 70, 1-11.
  19. Hu, X., **D. Li**, H. Huang<sup>\*</sup>, S. Shen, and E. Bou-Zeid (2014), Modeling and Sensitivity Analysis of Transport and Deposition of Radionuclides From the Fukushima Daiichi Accident, *Atmos. Chem. Phys.*, 14, 11065-11092.
  20. Wang, L., **D. Li<sup>\*</sup>**, Z. Gao, T. Sun, X. Guo, and E. Bou-Zeid (2014), Turbulent Transport of Momentum and Scalars Above an Urban Canopy, *Bound. Layer Meteorol.*, 150(3), 485-511.
  21. Li, Y., Z. Gao<sup>\*</sup>, **D. Li**, L. Wang, and H. Wang (2014), An Improved Non-iterative Surface Layer Flux Scheme for Atmospheric Stable Stratification Conditions, *Geosci. Model Dev.*, 7(2), 515-529.
  22. Zhang, Y., Z. Gao<sup>\*</sup>, **D. Li**, Y. Li, N. Zhang, X. Zhao and J. Chen (2014), On the Computation Of Planetary Boundary Layer Height Using the Bulk Richardson Number Method, *Geosci. Model Dev.*, 7, 2599-2611.
  23. **Li, D.<sup>\*</sup>**, M. Pan, Z. T. Cong, L. Zhang, and E. Wood (2013), Vegetation Control on Water and Energy Balance Within the Budyko Framework, *Water Resour. Res.*, 49(2), 969-976.
  24. **Li, D.<sup>\*</sup>**, and E. Bou-Zeid (2013), Synergistic Interactions Between Urban Heat Islands and Heat Waves: the Impact in Cities Is Larger Than the Sum of Its Parts, *J. Appl. Meteorol. Climatol.*, 52(9), 2051-2064.
  25. **Li, D.<sup>\*</sup>**, E. Bou-Zeid, M. L. Baeck, S. Jessup, and J. A. Smith (2013), Modeling Land Surface Processes and Heavy Rainfall in Urban Environments: Sensitivity to Urban Surface Representations, *J. Hydrometeorol.*, 14(4), 1098-1118.
  26. **Li, D.<sup>\*</sup>**, E. Bou-Zeid, M. Barlage, F. Chen, and J. A. Smith (2013), Development and Evaluation of a Mosaic Approach in the WRF-Noah Framework, *J. Geophys. Res.:Atmospheres*, 118(21), 2013JD020657.
  27. Katul, G. G.<sup>\*</sup>, **D. Li**, M. Chameki, and E. Bou-Zeid (2013), Mean Scalar Concentration Profile in a Sheared and Thermally Stratified Atmospheric Surface Layer, *Phys. Rev. E.*, 87(2), 023004.
  28. Zhao, Z.<sup>\*</sup>, Z. Gao, **D. Li**, X. Bi, C. Liu, and F. Liao (2013), Scalar Flux–Gradient Relationships Under

Unstable Conditions over Water in Coastal Regions, *Bound. Layer Meteorol.*, 148(3), 495-516.

29. **Li, D.\***, G. G. Katul, and E. Bou-Zeid (2012), Mean Velocity and Temperature Profiles in a Sheared Diabatic Turbulent Boundary Layer, *Phys. Fluids*, 24(10).

30. **Li, D.\***, E. Bou-Zeid, and H. De Bruin (2012), Monin–Obukhov Similarity Functions for the Structure Parameters of Temperature and Humidity, *Bound. Layer Meteorol.*, 145(1), 45-67.

31. **Li, D.**, and E. Bou-Zeid\* (2011), Coherent Structures and the Dissimilarity of Turbulent Transport of Momentum and Scalars in the Unstable Atmospheric Surface Layer, *Bound. Layer Meteorol.*, 140(2), 243-262.

## CONFERENCE PRESENTATIONS AND INVITED TALKS

2010: Tsinghua University, American Geophysical Union Fall Meeting

2011: Chinese Academy of Sciences, American Physical Society-Division of Fluid Dynamics Annual Meeting, Conference on Coherent Flow Structures in Geophysical Flows at Earth's Surface

2012: The Brutsaert - Parlange Hydrologic Meeting, American Meteorological Society-Symposium on Boundary Layers and Turbulence, American Geophysical Union Fall Meeting

2013: Pacific Northwest National Laboratory, Geophysical Fluid Dynamics Laboratory, Chinese Academy of Sciences, Tsinghua University, China Meteorological Administration

2014: American Meteorological Society Annual Meeting, European Geophysical Union General Assembly, Urban Environmental Pollution 2014 conference, American Geophysical Union Fall Meeting, MIT, Columbia University, Duke University, University of Illinois at Urbana-Champaign, Stony Brook University, Tsinghua University, Chinese Academy of Sciences, The Chinese University of Hong Kong

2015: Boston University, University of California at Los Angeles, University of California at Santa Cruz, University of Miami

## REVIEWS

**Proposals:** *US Army Research Office, Research Grants Council of Hong Kong*

**Journals:** *PLOS ONE, Environmental Research Letters, Environmental Pollution, Urban Climate, International Journal of Climatology, Remote Sensing of Environment, Quarterly Journal of the Royal Meteorological Society, Geophysical Research Letters, Journal of Geophysical Research-Atmospheres, Water Resources Research, Journal of Climate, Journal of Atmospheric Sciences, Journal of Applied Meteorology and Climatology, Journal of Hydrometeorology, Journal of Atmospheric and Oceanic Technology, Boundary-Layer Meteorology, Hydrology and Earth System Sciences, Advances in Water Resources, Hydrological Processes, Hydrological Sciences Journal, Atmospheric Environment, Frontiers of Earth Science, Atmosphere, Geoinformatics and Geostatistics: An overview, Journal of Arid Land, Advances*

**MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS**

American Geophysical Union (AGU)

American Meteorological Society (AMS)

American Physical Society (APS)

European Geosciences Union (EGU)