Delong Zuo

Professor
Department of Civil, Environmental and Construction Engineering
Texas Tech University

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GENERAL INFORMATION

Education

Ph.D. in Civil Engineering May 2005
The Johns Hopkins University
Dissertation: "Understanding Wind- and Rain-Wind-Induced Stay Cable Vibrations"
Advisor: Professor Nicholas P. Jones

Master of Science in Civil Engineering May 2003
The Johns Hopkins University

Master of Science in Structural Engineering April 1999
Chongqing Jiaotong University, Chongqing, China

Bachelor of Engineering in Civil Engineering (with highest honor) July 1996
Chongqing Jiaotong University, Chongqing, China

Professional Experience

Technical Director of Wind Engineering January 2019 – Present
National Wind Institute
Texas Tech University

Professor of Civil Engineering September 2021 – Present
Texas Tech University

Associate Professor of Civil Engineering September 2012 – August 2021
Texas Tech University

Assistant Professor of Civil Engineering September 2006 – August 2012
Texas Tech University

Postdoctoral Fellow April 2005 –August 2006
Department of Civil Engineering
The Johns Hopkins University

Visiting Scholar August 2002 - August 2004
Department of Civil and Environmental Engineering
University of Illinois at Urbana-Champaign

Selected Honors and Awards

- *Elected Member of Board of Directors* 2023 – Present
  American Association for Wind Engineering
- *Board Member* 2017 – 2025
  International Joint Research Laboratory of Wind Engineering
- *Whitacre Excellence in Research Award* 2017
  Whitacre College of Engineering, Texas Tech University
- *Faculty Research Award* *2010*
  Department of Civil and Environmental Engineering, Texas Tech University
- *Meyerhoff Fellowship* 1999-2000
  The Johns Hopkins University
- *Wufu-Zhenhua Scholarship* *1999*
  Department of Transportation, China

RESEARCH PROJECTS

Sponsored by Federal Agencies:

P1. National Science Foundation
IUCRC Phase II at Texas Tech University: Center for Wind Hazard and Infrastructure Performance (WHIP)
May 2025 – April 2030
PI: Delong Zuo; Co-PIs: Xinzhong Chen, Bradley Ewing and John Schroeder (Texas Tech University), Jean-Paul Pinelli (Florida Institute of Technology)
Total award: $525,000, Prorated: $262,500

P2. National Science Foundation
Mid-scale RI-1 (M1:DP): National Testing Facility for Enhancing Wind Resiliency of Infrastructure in Tornado-Downburst-Gust Front Events (NEWRITE)
October 2023 – September 2027
Co-PI: Delong Zuo and others; PI: Partha Sarkar (Iowa State University)
Total Award: $14,025,452, Prorated: $524,994

P3. National Science Foundation
Collaborative Research: Assessment of Building Resiliency in Tornadoes Considering Transient Internal Pressure Effects
November 2021 – October 2025
PI: Delong Zuo
Total Award: $242,623

P4. National Science Foundation

Natural Hazards Engineering Research Infrastructure: Network Coordination Office (Sub-award from Purdue University)
October 2021 – September 2025
Co-PI: Delong Zuo and others; PI: Julio Ramirez (Purdue University)
Total Award: $5,050,926, Prorated: $101,583

P5. National Science Foundation
Phase I of IUCRC at TTU: Center for Wind Hazard and Infrastructure Performance (WHIP)
March 2019 – February 2024
PI: Delong Zuo
Total Award:$750,000, Prorated: $225,000

P6. National Science Foundation
Collaborative Research: Assessment of Tornado Loading on Low-Rise Buildings Using Computational Modeling and Tornado Simulator Testing
May 2018 – April 2021
PI: Delong Zuo
Total Award: $243,255

P7. National Science Foundation
Benchmark Study of Tornado Wind Loading on Low-Rise Buildings with Consideration of Internal Pressure
May 2017 – April 2020
PI: Delong Zuo; Co-PI: Darryl James
Total Award: $350,001, Prorated: $262,501

P8. National Corporative Highway Research Program
Evaluating the Effectiveness of Vibration-Mitigation Devices for Structural Supports of Signs, Luminaires, and Traffic Signals (Sub-award from University of Connecticut)
April 2017 – June 2019
Co-PI: Delong Zuo and others; PI: Richard Christenson (University of Connecticut)
Total Award: $500,001, Prorated: $130,552

P9. National Science Foundation
Natural Hazards Engineering Research Infrastructure: Network Coordination Office (Sub-award from Purdue University)
July 2016 – June 2020
Co-PI: Delong Zuo and others; PI: Julio Ramirez (Purdue University)
Total Award: $4,100,000, Prorated: $82,960

P10. Department of Energy
Optimization of Wind Turbine Performance (sub-award from Alstom Power, Inc.)
September 2014 – August, 2015
PI: Delong Zuo, Co-PI: John Schroeder

Total Award: $148,483, Prorated: $74,242

P11. National Science Foundation
Development of a Practical Model for Wind- and Rain-Wind-Induced Stay Cable Vibrations
September 2009 – August 2012
PI: Delong Zuo (100%)
Total Award: $150,529

P12. National Science Foundation
Wind Tunnel Comparative Study (Sub-award from Colorado State University)
Co-PI: Delong Zuo, PI: Douglas Smith,
Total Award: $20,000, Prorated: $10,000

P13. Department of Energy
Full-Scale Testing, Characterization, System Optimization & Demonstration of Grid Connected Wind Turbines & Wind Powered Water Desalination Project
September 2008 – September 2012
Co-PI: Delong Zuo and others, Primary PI: Andy Swift/John Schroeder,
Total Award: $5,871,000; Prorated: $410,970

Sponsored by State Agencies:

P14. Texas Department of Transportation
Fatigue Resistance and Reliability of High Mast Illumination Poles (HMIPs) with Pre-existing Cracks (subcontract from University of Houston)
January – August 2018
PI: Delong Zuo
Total Award: $53,128

P15. Texas Department of Transportation
Fatigue Resistance and Reliability of High Mast Illumination Poles (HMIPs) with Pre-existing Cracks (subcontract from University of Houston)
September 2014 – August 2016
PI: Delong Zuo
Total Award: $198,713

P16. Texas Department of Transportation
Development of Design Guidelines and Mitigation Strategies for Wind-Induced Traffic Signal Structure Vibrations
September 2010 – August 2014
PI: Delong Zuo, Co-PI: Xinzhong Chen
Total Award: $459,465, Prorated: $278,630

P17. Texas Department of Transportation
Testing of Alternative Support Materials for Portable Roll-up Signs Used in Maintenance Work Zones

September 2010 – August 2013
Co-PI: Delong Zuo and Derrick Tate, PI: Sangwook Bae,
Total Award: $321,508, Prorated: $106,098

P18. Texas Department of Transportation
Monitoring of Pedestrian-Induced Vibration of Pedestrian Bridge No. 3 in Lubbock, TX
November 2008
PI: Delong Zuo, Co-PI: Kishor Mehta and Xinzhong Chen
Total Award: $4,599, Prorated: $2,759

Sponsored by Private Industry:

P19. NSF IUCRC for Wind Hazard and Infrastructure Performance (WHIP)
Evaluation of Tornado-Like Loading on a Residential Building and a Commercial Building with Consideration of Surface Roughness Effects
September 2024 – August 2025
PI: Delong Zuo
Total Award: $82,073

P20. NSF IUCRC for Wind Hazard and Infrastructure Performance (WHIP)
Evaluation of Tornado-Like Loading on Buildings of Various Shapes and Geometries
June 2023 – May 2024
PI: Delong Zuo
Total Award: $178,442

P21. NSF IUCRC for Wind Hazard and Infrastructure Performance (WHIP)
Development of Fragility Curves for Tornadic Loading on Low-Rise Buildings
May 2021 – April 2023
PI: Delong Zuo
Total Award: $144,524

P22. Central Research Institute of Electric Power Industry, Japan
Ensemble averaged lift characterization of a translating bluff body in a tornado-like flow
January 2018 – May 2018
Co-PI: Delong Zuo, PI: Darryl James
Total Award: $35,873, Prorated: $17,936

P23. Central Research Institute of Electric Power Industry, Japan
Pressure and force characterization around a rectangular plan model in a tornado-like flow
November 2021 – April 2022
Co-PI: Delong Zuo, PI: Darryl James
Total Award: $40,000, Prorated: $20,000

P24. Central Research Institute of Electric Power Industry, Japan
Velocity characterization of tornadic-like flows
September 2016 – May 2017

Co-PI: Delong Zuo, PI: Darryl James
Total Award: $55,657, Prorated: $27,829

P25. Burns and McDonnell
Pampa, TX Climate Study
March 2017 – December 2017
Co-PI: Delong Zuo, PI: Stephen Morse
Total Award: $63,956, Prorated: $31,978

P26. Burns and McDonnell
Tower Monitoring in Pampa, TX
June 2016 – August 2018
PI: Delong Zuo, Co-PI: Stephen Morse
Total Award: $ 363,956, Prorated: $181,978

P27. Alstom Wind
Correlating Low-Level Atmospheric Wind Measurements with Wind Turbine Performance
April 2012 – January 2013
PI: Delong Zuo, Co-PI: John Schroeder
Total Award: $95,000, Prorated: $47,500

P28. NV Energy
Investigation of Wind-induced Vibration on a Tubular Guyed-V Transmission Structure
March 2012 – September 2012
Co-PI: Delong Zuo and Stephen Morse, PI: Douglas Smith
Total Award: $183,327, Prorated: $61,109

P29. Western Towers
An Exploratory Study for Retrofitting Tilt Towers for PTC Systems
March 2012 – May 2013
Co-PI: Delong Zuo and Stephen Morse, PI: Douglas Smith
Total Award: $15,621, Prorated: $5,207

P30. International Sign Association
International Sign Association Sign Testing - Phases 2B, 3 and 4
August 2011 – May 2012
Co-PI: Delong Zuo and Douglas Smith, PI: Kishor Mehta
Total Award: $43,905, Prorated: $26,343

P31. Outdoor Advertising Association of America
Outdoor Advertising Association of America FY11 Sign Testing
October 2010 – May 2012
Co-PI: Delong Zuo and Douglas Smith, PI: Kishor Mehta
Total Award: $35,000, Prorated: $21,000

P32. Outdoor Advertising Association of America
Outdoor Advertising Association of America Sign Testing - Phases 2B, 3 and 4
October 2010 – May 2012
Co-PI: Delong Zuo and Douglas Smith, PI: Kishor Mehta
Total Award: $52,810, Prorated: $31,686

P33. International Sign Association and Outdoor Advertising Association of America
Sign Tests in the Field and in the Wind Tunnel
August 2008 – December 2009
Co-PI: Delong Zuo and Douglas Smith, PI: Kishor Mehta
Total Award: $61,258, Prorated: $24,503

PUBLICATIONS

Archival Journal Articles (Boldfaced = Corresponding Author):

J1. Zhuo, T., Chen, Q., Wu, X., James, D.L., **Zuo, D.**, "An investigation of the major characteristics of surface pressure fields beneath two types of tornado-like vortices and their causes." *Journal of Wind Engineering and Industrial Aerodynamics*, under review.

J2. Chen, Q., Tang, Z., Wu, X., **Zuo, D**., James, D. (2023). "Laboratory study of tornado-like loading on a low-rise building model." *Journal of Wind Engineering and Industrial Aerodynamics*, 238: 105443. https://doi.org/10.1016/j.jweia.2023.105443

J3. Tang, Z., **Zuo, D.**, James, D., Eguchi, Y., and Hattori, Y., (2022). "Experimental study of tornado-like loading of rectangular prisms." *Journal of Fluids and Structures*, 113: 103672. https://doi.org/10.1016/j.jfluidstructs.2022.103672

J4. Verma, S., **Selvam, R.P.**, Tang, Z., and Zuo, D., (2022) "Comparison of tornado-induced pressures on building from CFD model with TTU experimental measurements." *Journal of Wind Engineering and Industrial Aerodynamics*, 228: 105076. https://doi.org/10.1016/j.jweia.2022.105076

J5. **Rodrigues, D.V.Q.**, Zuo, D., and Li, C., (2022). "A MODWT-based algorithm for the identification and removal of jumps/short-term distortions in displacement measurements used for structural health monitoring." *IoT*, 3(1), 60-72. https://doi.org/10.3390/iot3010003

J6. **Zuo, D.**, Tang, Z, Zhang, H., James, D., and Eguchi, Y, (2021) "Narrowband components in two-celled tornado-like vortices generated in a Ward-type tornado simulator." *Journal of Wind Engineering and Industrial Aerodynamics*, 128: 104767. https://doi.org/10.1016/j.jweia.2021.104767

J7. **Rodrigues, D.V.Q.**, Zuo, D., Li, C., (2021). "Wind-induced displacement analysis for a traffic light structure based on a low-cost Doppler radar array." *IEEE Transactions on Instrumentation and Measurement*, 70: 1-9. https://doi.org/10.1109/TIM.2021.3098380

J8. **Rodrigues, D.V.Q.**, Zuo, D., Tang, Z., Wang, J., Gu, C., and Li, C. (2020), "Adaptive displacement calibration strategies for field structural health monitoring based on Doppler

radars." *IEEE Transactions on Instrumentation and Measurement*, https://doi.org/10.1109/TIM.2020.2982233

J9. Johnson, D.R., Blain, C.A., Bobet, A., Browning, J., Edge, B., Holmes, B., Lachance, M., **Ramirez, J.A**., Robertson, I., Smith, T., Thompson, C., Vielma, K, Zehner, D., and Zuo, D. (2020), "The Network Coordination Office of NHERI (Natural Hazards Engineering Research Infrastructure)." *Frontiers in Built Environment*, https://doi.org/10.3389/fbuil.2020.00108

J10. Hua, J. and **Zuo, D.** (2019), "Assessment of aerodynamic damping in full-scale rain-wind-induced stay cable vibration." *Journal of Wind Engineering and Industrial Aerodynamics*, 191: 215-226. https://doi.org/10.1016/j.jweia.2019.06.008

J11. Wu, L. and **Zuo, D.** (2018), "Numerical evaluation of coupled galloping of slender towers in turbulent flow." *Journal of Fluids and Structures*, 83: 358-371. https://doi.org/10.1016/j.jfluidstructs.2018.09.011

J12. Tang, Z., Feng, C., Wu, L., **Zuo, D**. and James, D. (2018), "Characteristics of tornado-like vortices simulated in a large-scale Ward-type simulator." *Boundary Layer Meteorology*, 166: 327–350. https://doi.org/10.1007/s10546-017-0305-7

J13. **Eguchi, Y.**, Hattori, Y., Nakao, K., James, D. and Zuo, D. (2018), "Numerical pressure retrieval from velocity measurement of a turbulent tornado-like vortex." *Journal of Wind Engineering and Industrial Aerodynamics*, 174: 61-68. https://doi.org/10.1016/j.jweia.2017.12.021

J14. Tang, Z., **Zuo, D.**, James, D., Eguchi, Y. and Hattori, Y. (2018), "Effects of aspect ratio on laboratory simulation of tornado-like vortices." *Wind and Structures*, 27(2): 111-121. https://doi.org/10.12989/was.2018.27.2.111

J15. **Huang, G.**, Liu, W., Zhou, G. and Yan, Z. and Zuo, D. (2018), "Numerical study for downburst wind and its load on high-rise building." *Wind and Structures*, 27(2): 89-100. https://doi.org/10.12989/was.2018.27.2.089

J16. **Zuo, D.**, Wu, L., Smith, D.A. and Morse, S.M. (2017), "Experimental and analytical study of galloping of a slender tower." *Engineering Structures*, 132: 44-60. https://doi.org/10.1016/j.engstruct.2016.11.027

J17. Ding, J., **Chen, X.**, Zuo, D. and Hua, J. (2016), "Fatigue life assessment of traffic-signal-support structures from analytical approach and long-term vibration monitoring data." *Journal of structural engineering,* 142(6): 04016017. https://doi.org/10.1061/(ASCE)ST.1943-541X.0001475

J18. **Zuo, D.**, Smith, D.A. and Mehta, K.C. (2014), "Experimental study of wind loading of rectangular sign structures." *Journal of Wind Engineering and Industrial Aerodynamics*, 130: 62-74. https://doi.org/10.1016/j.jweia.2014.04.005

J19. **Christenson, R.E.**, Cashany, M., Hua, J. and Zuo, D. (2014), "Field testing of signal head vibration absorber mitigation device to reduce fatigue in wind-excited traffic signal support structures." *Transportation Research Record, Journal of the Transportation Research Board*, No. 2406, 42-48. https://doi.org/10.3141/2406-05

J20. **Zuo, D.** (2014), "Full-scale measurement of wind pressure on the surface of an oscillating circular cylinders." *Journal of Wind Engineering and Industrial Aerodynamics*, 133, 65-79. https://doi.org/10.1016/j.jweia.2014.08.001

J21. **Smith, D.A.**, Zuo, D. and Mehta, K.C. (2014), "Characteristics of net force and torques on a rectangular sign measured in the field." *Journal of Wind Engineering and Industrial Aerodynamics*, 133: 80-91. https://doi.org/10.1016/j.jweia.2014.07.010

J22. Liu, M., D. Zuo, and **Jones, N.P.** (2013), "Analytical and numerical study of deck-stay interaction in a cable-stayed bridge in the context of field observations." *Journal of Engineering Mechanics* 139(11): 1636-1652. https://doi.org/10.1061/(ASCE)EM.1943-7889.0000596

J23. Zachry, B.C., **Letchford, C.W.**, Zuo, D, and Kennedy, A.B. (2013), "Laboratory measurements of the drag coefficient over a fixed shoaling hurricane wave train." *Wind and Structures.* 16(2): 193-211. https://doi.org/10.12989/was.2013.16.2.193

J24. **Zuo, D.**, Hua, J. and Landuyt D.V. (2012), "A model of pedestrian-induced bridge vibration based on full-scale measurement." *Engineering Structures*, 45: 117-126. https://doi.org/10.1016/j.engstruct.2012.06.015

J25. **Zuo, D.**, Letchford, C.W., and Wayne, S.P. (2011), "Wind tunnel study of wind loading on rectangular louvered panels." *Wind and Structures*, Vol. 14, No. 5: 449-463. https://doi.org/10.12989/was.2011.14.5.449

J26. **Zuo, D.** and Letchford, C.W. (2010), "Wind-induced vibration of a traffic-signal-support structure with cantilevered tapered circular mast arm." *Engineering Structures*, 32(10): 3171-3179. https://doi.org/10.1016/j.engstruct.2010.06.005

J27. **Zuo, D.** and Jones, N.P. (2010), "Interpretation of field observations of wind- and rain-wind-induced stay cable vibrations." *Journal of Wind Engineering and Industrial Aerodynamics*, 98(2): 73-87. https://doi.org/10.1016/j.jweia.2009.09.004

J28. **Zuo, D.** and Jones, N.P. (2009), "Wind tunnel testing of yawed and inclined circular cylinders in the context of field observations of stay-cable vibrations." *Journal of Wind Engineering and Industrial Aerodynamics*, 97(5-6): 219-227. http://doi.org/10.1016/j.jweia.2009.06.009

J29. **Caracoglia L.** and Zuo, D. (2009), "Effectiveness of cable networks of various configurations in suppressing stay-cable vibration." *Engineering Structures*, 31(12): 2851-2864. https://doi.org/10.1016/j.engstruct.2009.07.012

J30. **Zuo, D.**, Jones, N. P., and Main, J. A. (2008), "Field observation of vortex- and rain-wind-induced stay-cable vibrations in a three-dimensional environment." *Journal of Wind Engineering and Industrial Aerodynamics*, 96(6-7): 1124-1133. https://doi.org/10.1016/j.jweia.2007.06.046

Peer-Reviewed Conference Articles:

C1. Chen, Q., Tang, Z. and Zuo, D., "Effects of various opening configurations on tornado-like loading on a low-rise building model." *15th Americas Conference on Wind Engineering*, St. Louis, MO, USA, May 2025

C2. Wu, X., Chen, Q., Rhee, D.M., Levitan, M. and Zuo, D., "Evaluation of tornado uplift pressure adjustment factor based on tornado simulator and boundary layer wind tunnel experiments." *15th Americas Conference on Wind Engineering*, St. Louis, MO, USA, May 2025

C3. Kang, J. and Zuo, D., "Comparison of aerodynamic damping in rain-wind-induced and vortex-induced vibrations of full-scale stay cables." *15th Americas Conference on Wind Engineering*, St. Louis, MO, USA, May 2025

C4. Wu, X. and Zuo, D., "Probabilistic simulation of tornado-like loading on a low-rise building based on laboratory testing." *16th International Conference on Wind Engineering*, Florence, Italy, August 2023.

C5. Chen, Q. and Zuo, D., Tang, Z., and James, D.L., "Tornado-like loading on a low-rise building model by a single-celled and a two-celled vortex." *16th International Conference on Wind Engineering*, Florence, Italy, August 2023.

C6. Chen, Q., Tang, Z., Wu, X., Zuo, D., James, D., "Effect of openings and translation speed on tornado-like loading of a low-rise building model." *14th Americas Conference on Wind Engineering*, Lubbock, TX, USA, May 2022.

C7. Zhang, H., Tang, Z., Zuo, D., James, D., "Numerical simulation of tornado-like vortex generated in a tornado simulator using large eddy simulation." *14th Americas Conference on Wind Engineering*, Lubbock, TX, USA, May 2022.

C8. Wu, X., Tang, Z., Chen, Q., Zhang, H., Zuo, D., "Evaluation of building response to tornado-like loading based on laboratory testing of a building model." *14th Americas Conference on Wind Engineering*, Lubbock, TX, USA, May 2022.

C9. Zuo, D., Tang, Z., Wu, L. and James, D.L., "Internal pressure of a low-rise building model in tornado-like vortices." *9th International Colloquium on Bluff Body Aerodynamics and Applications*, Birmingham, UK, July 2020.

C10. Rodrigues, D.V.Q., Tang, Z., Wang, J., Zuo, D., and Li, C., "Structural health monitoring of a traffic signal support structure based on 5.8-ghz doppler radar with median filter and

revised circle fitting." *2020 IEEE Radio and Wireless Symposium (RWS)*, San Antonio, TX, USA, 2020, 187-190, https://doi.org/10.1109/RWS45077.2020.9050044

C11. Wu, L. and Zuo, D., "Numerical evaluation of nonlinear coupled galloping of a slender tower." *9th Asia-Pacific Conference on Wind Engineering*, Auckland, New Zealand, December 2017.

C12. Tang, Z., Wu, L., Feng, C., Zuo, D. and James, D., "Effects of aspect ratio on tornado-like vortices simulated in a large-scale tornado simulator." *13th Americas Conference on Wind Engineering*, Gainesville, FL, USA, May 2017

C13. Chen, Y.C., Manuel, L., Morovat, M.A. and Zuo, D., "Assessing the wind-induced response of high-mast illumination poles (HMIPs) using field data." *13th Americas Conference on Wind Engineering*, Gainesville, FL, USA, May 2017

C14. Tang, Z., Feng, C., Wu, L. Zuo, D. and James, D., "Simulations of tornado-like vortices in a large-scale ward-type tornado simulator." *8th International Colloquium on Bluff Body Aerodynamics and Applications*, Boston, MA, USA, June 2016

C15. Wu, L. and Zuo, D., "Analytical and numerical evaluation of coupled galloping of slender towers." *1st International Symposium on Flutter and its Application*, Tokyo, Japan, May 2016

C16. Xiao, J. and Zuo, D., "Conditional simulation of non-stationary wind field based on discrete wavelet transform." *14th International Conference on Wind Engineering*, Porto Alegre, Brazil, June 2015

C17. Zuo, D., Smith, D.A. and Morse, S.A., "Coupled galloping of a slender tower with distinct natural frequencies in two orthogonal directions: experimental study." *14th International Conference on Wind Engineering*, Porto Alegre, Brazil, June 2015

C18. Wu, L. and Zuo, D., "Coupled galloping of a slender tower with distinct natural frequencies in two orthogonal directions: analytical study." *14th International Conference on Wind Engineering*, Porto Alegre, Brazil, June 2015

C19. Christenson, R.E., Cashany, M., Hua, J. and Zuo, D., "Field testing of the signal head vibration absorber mitigation device to reduce fatigue in wind–excited traffic signal support structures." *Transportation Research Board 92nd Annual Meeting*, Washington, D.C., USA, January 2014

C20. Hua, J. and Zuo, D., "Experimental investigation of wind-induced vibration of slender tapered cylinders." *12th Americas Conference on Wind Engineering*, Seattle, WA, USA, June 2013.

C21. Smith, D.A., Zuo, D. and Mehta, k.C., "Characteristics of net force and torques on a rectangular sign measured in the field." *12th Americas Conference on Wind Engineering*, Seattle, WA, USA, June 2013.

C22. Zuo, D., Xiao, J., Schroeder, J. L., Carcangiu, C. E. and Morse, J. C. "Correlating low-level atmospheric measurements with wind turbine performance." *WINDPOWER 2013 Conference & Exhibition*, Chicago, IL, USA, May 2013.

C23. Hua, J. and Zuo, D., "Wind-induced vibration of mast arm traffic signal support structure of various configurations", *3rd American Association for Wind Engineering Workshop*, Hyannis, MA, August 2012.

C24. Zuo, D. and Xiao, J., "Characteristics of wind in stable boundary layers", *3rd American Association for Wind Engineering Workshop*, Hyannis, MA, August 2012.

C25. Zuo, D. and Hua, J., "Full-scale measurement of wind pressure on the surface of a circular cylinder." *7th International colloquium on Bluff Body Aerodynamics and Application*, Shanghai, China, September 2012.

C26. Zuo, D., Mehta, K.C. and Smith, D.A., "Benchmark wind tunnel study of wind loading on rectangular sign structures." *7th International colloquium on Bluff Body Aerodynamics and Application*, Shanghai, China, September 2012.

C27. Smith, D.A., Zuo, D. and Mehta, K.C., "Wind-induced force and torque on a sign measured in full- and model-scale." *ATC-SEI Advances in Hurricane Engineering Conference*, Miami, FL, USA, October 2012.

C28. McNeill, J. and Zuo, D., "Low-level jet characterization and implications for wind turbine inflow simulation." *13th International Conference on Wind Engineering*, Amsterdam, the Netherlands, July 2011.

C29. Zuo, D. and McNeill, J., "Assessment of wind turbine loading based on conditionally simulated inflow wind field." *Engineering Mechanics Institute Conference*, Boston, MA, USA, June 2011.

C30. Zuo, D., "Performance of a simply-supported reinforced concrete footbridge subjected to pedestrian loading." *International Symposium on Life-Cycle Performance of Bridges and Structures*, Changsha, China, June 2010.

C31. McNeill, J. and Zuo, D. "Inhomogeneity of wind turbulence field: Implications for wind turbine inflow simulation." *WINDPOWER 2010 Conference & Exhibition*, Dallas, TX, USA, May 2010.

C32. Zuo, D. "Wind-induced vibration of slender structures with tapered circular cylinders", *7th Asian Pacific Conference on Wind Engineering*, Taipei, Taiwan, November 2009.

C33. Zachry, B.C., Letchford, C.W., Zuo, D., Schroeder, J.L., and Kennedy, A.B., "Surface drag coefficient behavior during hurricane Ike: Implications for the ASCE wind load standard and hurricane storm surge forecasting." *Proceedings for the Hurricane Hugo 20th Anniversary Symposium*, Charleston, SC, USA, October 2009.

C34. Zuo, D. and Letchford, C.W., "Field observations of traffic signal structure vibration." *11th Americas Conference on Wind Engineering*, San Juan, Puerto Rico, June 2009.

C35. Zachry, B.C., Letchford, C.W., Zuo, D., Schroeder, J.L., and Kennedy, A.B., "Surface drag coefficient behavior during hurricane Ike." *11th Americas Conference on Wind Engineering*, San Juan, Puerto Rico, June 2009.

C36. Zuo, D., "Field observations of wind-induced lighting pole vibration." *1st Workshop of the American Association of Wind Engineers*, Vail, CO, USA, August 2008.

C37. Caracoglia, L. and Zuo, D., "Towards the development of a rational design guideline for in-plane cable networks." *Inaugural International Conference of the Engineering Mechanics Institute*, Minneapolis, MN, USA, May 2008: CD-ROM.

C38. Caracoglia, L., Zuo, D., and Jones, N.P. "Dynamic analysis of a cable network with multiple dampers." *7th International Symposium on Cable Dynamics*, Vienna, Austria, December 2007.

C39. Zuo, D., Caracoglia, L., and Jones, N.P., "Assessment of cross-tie performance in mitigating wind and rain-wind-induced stay cable vibrations." *12th International Conference on Wind Engineering*, Cairns, Australia, July 2007: 903-910.

C40. Liu, M.Y., Zuo, D., and Jones, N.P., "Deck-induced stay cable vibrations: Field observations and analytical model." *6th International Symposium on Cable Dynamics*, Charleston, SC, USA, September 2005: 175-182.

C41. Zuo, D. and Jones, N.P., "Large amplitude dry cable vibration and its implication for rain-wind induced vibrations." *5th European Conference on Structural Dynamics*, Paris, France, September 2005: 367-372.

C42. Zuo, D. and Jones, N.P., "The mechanism of rain-wind-induced vibration: vortex-shedding or galloping." *10th Americas Conference on Wind Engineering*, Baton Rouge, LA, USA, June 2005: CD-ROM.

C43. Zuo, D., Jones, N.P., and Main, J.A., "Vortex- and rain-wind-induced stay cable vibrations in a three-dimensional environment." *5th International Colloquium on Bluff Body Aerodynamics and Applications*, Ottawa, Canada, July 2004: 397-400.

C44. Zuo, D. and Jones, N.P., "Interpretation of observed damper performance in mitigating wind and rain-wind induced stay-cable vibrations." *11th International Conference on Wind Engineering*, Lubbock, TX, USA, June 2003: 2133-2140.

Non-Peer-Reviewed Conference Proceedings:

C45. Xiao, J. and Zuo, D., "Inhomogeneity of wind turbulence field: implications for wind loading of wind turbines." 6th US-Japan Workshop on Wind Engineering, Tokyo, Japan, May 2016.

C46. McNeill, J. and Zuo. D., "Inhomogeneity of wind turbulence field: implications for wind loading of wind turbines." 5th US-Japan Cooperative Program in Natural Resources Workshop on Wind Engineering, Chicago, IL, USA, July 2010.

C47. Jones, N.P. and Zuo, D., "Assessment of the performance of dampers and cross-ties in mitigating stay cable vibrations using full-scale measurement data." 40th Panel Meeting of the Wind and Seismic Effects Committee of the US-Japan Cooperative Program in Natural Resources, Gaithersburg, MD, May 2008.

C48. Jones, N.P. and Zuo, D., "Understanding wind- and rain-wind-induced stay cable vibrations from field observations and wind tunnel tests" 4th US-Japan Cooperative Program in Natural Resources Workshop on Wind Engineering, Tsukuba, Japan, July 2006.

C49. Zuo, D. and Jones, N.P., "Understanding the mechanism of rain-wind-induced vibrations in the context of dry cable vibrations observed in the field and in the wind tunnel." Wind Induced Vibration of Cable Stay Bridges Workshop, St. Louis, MO, USA, April 2006.

Research Reports:

R1. Zuo, D. and Morse, S.M., "Report on the Estimation of Fatigue and Climate Study for Gray County Transmission Line." Submitted to Burns and McDonnell Engineering Company, Inc., November 2017

R2. James, D. Zuo, D. and Tang, Z., "Velocity and pressure measurements in VorTECH." Submitted to Central Research Institute of Electrical Power Industry, Japan, May 2017

R3. Smith, D.A., Morse, S.M. and Zuo, D., "Report on the Investigation of Wind-Induced Vibration of a Tubular Transmission Tower", Submitted to Burns and McDonnell Engineering Company, Inc., Auhust 2016

R4. Zuo, D. and Xiao, J., "Offshore Wind Characterization." Final Report to: GE Energy, April 2016

R5. Zuo, D., Chen, X. and Hua, J., "Development of Design Guidelines and Mitigation Strategies for Wind-Induced Traffic signal support structure Vibrations." Submitted to Texas Department of Transportation, May 2015

R6. Zuo, D. and Schroeder, J., "Task Order 6 Final Report." Submitted to: Alstom Power, Inc., February 2014

R7. Zuo, D., Smith, D. A. and Mehta, K. C., "Full-scale and wind tunnel study of wind loading on sign structures." Final Report to: International Sign Association, Alexandria, VA, USA, and Outdoor Advertising Association of America, Washington, D.C. USA, March 2012.

R8. Zuo, D., Smith, D. A. and Mehta, K. C., "Wind tunnel testing of signs: Study phases 2b, and 3." Report to: International Sign Association, Alexandria, VA, USA, and Outdoor Advertising Association of America, Washington, D.C. USA, March 2012.

R9. Zuo, D., Smith, D.A. and Mehta, K. C., "Field and wind tunnel testing of signs: Study phase 2a." Report to: International Sign Association, Alexandria, VA, USA, and Outdoor Advertising Association of America, Washington, D.C. USA, March 2011.

R10. Mehta, K. C., Smith, D. and Zuo, D., "Field and wind tunnel testing of signs: study phase 1." Report to: International Sign Association, Alexandria, VA, USA, and Outdoor Advertising Association of America, Washington, D.C. USA, November 2010.

R11. Zuo, D., "Monitoring of pedestrian-induced vibration of pedestrian bridge No. 3 in Lubbock, TX." Report to: Texas Department of Transportation, Austin, TX, USA, November 2008.

R12. Zuo, D. and Letchford, C.W., "Investigation of wind-induced highway lighting pole vibration using full-scale measurement." Report to: Texas Department of Transportation, Austin, TX, USA, October 2007

R13. Zuo, D. and Jones, N.P., "Stay-cable vibration monitoring of the Fred Hartman Bridge (Houston, Texas) and the Veterans Memorial Bridge (Port Arthur, Texas). "Final report to: Texas Department of Transportation, Austin, Texas, and University of Texas at Austin, Austin, TX, USA, September 2005.

R14. Jones, N.P. and Zuo, D., "Measurement of stay damping-Sunshine Skyway Bridge-Tampa, FL. "Report to: Lendis Corporation, McLean, VA, USA and Federal Highway Administration, Washington, D.C., USA, March 2002.

INVITED TALKS:

T1. Zuo, D., "Experimental and Numerical Simulation of Tornadoes and Tornadic Loading on Structures." Workshop for Development of a National Testing Facility for non-synoptic wind storms, Chicago, IL, USA, October 2022

T2. Zuo, D., "Wind-Induced Vibration of Slender Structures: From Measurement to Modeling." Southwest Jiaotong University, Chengdu, China, June 2019

T3. Zuo, D., "Numerical and Physical Simulation of Non-Synoptic Winds." Southwest Jiaotong University, Chengdu, China, December 2017

T4. Zuo, D., "Coupled Galloping of Slender Towers: Analytical, Numerical and Experimental Studies." Zhengzhou University, Zhengzhou, China, October 2017

T5. Zuo, D. and Liang, D., "Facilities at Texas Tech University for Research on Tornado Loading of Structures." 1st International Workshop on Advanced Wind Engineering Testing Technology, Tongji University, Shanghai, China, August 2017

T6. Zuo. D., "Characteristics of Tornado-Like Vortices Simulated in a Ward-Type Simulator." University of Arkansas, October 2016

T7. Zuo, D., "Investigation of Wind and Wind Loading on Structures: From Full-Scale and Laboratory Experiments to Analytical and Numerical Modeling." Central South University, China. August 2016

T8. Zuo, D., "Wind Tunnel: An Infrastructure for Research: Wind-Induced Loading and Vibration of Structures: Full-Scale and Wind Tunnel Studies." National University of Mexico, National University of Mexico. November 2014

T9. Zuo, D., "Wind-Induced Vibration of Traffic Signal Support Structures." Fall 2013 ASCE Texas Section Conference and Centennial Celebration, Dallas, Texas, September 2013

T10. Zuo, D., "Wind-Induced Stay Cable Vibration and Mitigation Strategies." Bridge Committee meeting, Post-Tensioning Institute, Miami, FL, USA, October 2012

T11. Zuo, D., "Wind-Induced Structural Vibration and Control." Chongqing Jiaotong University, China, September 2012

T12. Zuo, D., "Wind-Induced Vibration of Stay Cables." Wuhan University of technology, China, June 2010

T13. Zuo, D., "Understanding Wind- and Rain-Wind-Induced Stay Cable Vibrations Using Full-Scale Measurements." Yokohama National University, Japan, December 2009.

T14. Zuo, D., "Mitigation of Wind- and Rain-Wind-Induced Stay Cable Vibrations." Honshu-Shikoku Bridge Expressway Co., Ltd., Japan, December 2009.

T15. Zuo, D., and Jones, N.P., "Experience and Lessons in Full-Scale Measurement of Structural Vibrations." Bridge Dynamics and Monitoring Workshop, The Johns Hopkins University, Baltimore, MD, USA, October 2009.

T16. Zuo, D., "Measurement and Mitigation of Bridge Vibrations." Metropolitan Transit Authority of Harris County, Houston, TX, USA, April 2009.

T17. Zuo, D., "Pedestrian-Induced Vibration of a Foot-Bridge." Caprock Branch, American Society of Civil Engineers, Lubbock, TX, USA, January 2009.

T18. Zuo, D., "Field Observations of Wind- and Rain-Wind-Induced Stay Cable Vibrations." University of Strathclyde, Glasgow, Scotland, March 2008.

T19. Zuo, D., "Wind- and Rain-Wind-Induced Stay Cable Vibrations." Northeastern University, Boston, MA, USA, October 2006.

T20. Jones, N.P. and Zuo, D., "Lessons Learned from Full-Scale Measurement of Stay Cable Vibration." 6th International Symposium on Cable Dynamics, Charleston, SC, USA, September 2005.

TEACHING

Graduate Courses:

- Advanced Mechanics of Solids
- Structural Dynamics I
- Structural Dynamics II
- Theory of Elastic Stability

- Wind Engineering

Undergraduate Courses:

- Design of Engineering Systems (Structures Section)
- Dynamics
- Mechanics of Solids

STUDENT ADVISING

Current:

- Xinyang Wu, Ph.D. Student
- Jiping Kang, Ph.D. Student
- Anamika Malla, Ph.D. student

Graduated:

- Qiang Chen, Ph.D. August 2024
- Hui Zhang, Ph.D. August 2024
- Liang Wu, Ph.D. August 2019
- Jieying Hua, Ph.D. December 2016
- Jingting Xiao, Ph.D. August 2016
- Jason McNeill, Ph.D. May 2012
- Brian Zachry, Ph.D. (Co-advised with Dr. Chris Letchford) August 2009
- Alex Saez, MS December 2012
- Mahesh Shrestha, MS July 2008

SERVICES

Professional Services:

- Associate Editor, Journal of Fluids and Structures
- Co-Chair, 14th Americas Conference on Wind Engineering, Lubbock, TX, USA, May 2022
- Member of the Scientific Committee, 9th International Colloquium on Bluff Body Aerodynamics and Applications, Birmingham, UK, June 2020.
- Chair of the "Long-span bridges (1)" session, 15th International Conference on Wind Engineering, Beijing, China, September 2019
- Member of the Scientific Committee, 7th International Symposium on Computational Wind Engineering, Seoul, South Korea, June 2018.
- Chair of the "High-Rise Building V" session, 9th Asia Pacific Conference on Wind Engineering, Auckland, New Zealand, December 2017
- Chair of the "Tornadoes III" session, 13th Americas Conference on Wind Engineering, Gainesville, Florida, USA, May 2017
- Member of the Scientific Committee, 8th International Colloquium on Bluff Body Aerodynamics and Applications, Boston, MA, USA, June 2016.

- Chair of the "Bluff-Body Aerodynamics - Experiments, Full-Scale Methods" Session, 8th International Colloquium on Bluff Body Aerodynamics and Applications, Boston, MA, USA, June 2016.
- Organizer, "Third United States–Japan Workshop on Structural Dynamics and Monitoring of Bridges and Other Flexible Structures against Wind Hazards", Lubbock, TX, USA, March 2012.
- Chair of two sessions at the 11th Americas Conference on Wind Engineering in June 2009 in Puerto Rico.
- Co-chair of session "Aerodynamics of other structures" at the 7th International Colloquium on Bluff Body Aerodynamics and Applications in September 2012 in Shanghai, China.
- Reviewer for "Journal of Engineering Mechanics", "Engineering Structures", "Journal of Bridge Engineering", "Journal of Fluids and Structures", "Journal of Sound and Vibration", "Journal of Structural Engineering", "Journal of Wind Engineering and Industrial Aerodynamics", "Journal of Wind Energy", "Structural Health Monitoring" and "Wind and Structures."

State, National and International Committees and Panels:

- Member of the Wind Loads Subcommittee, American Society of Civil Engineers
- Member of the Tornado Wind Speed Estimation Standards Committee, American Society of Civil Engineers
- Participant on the Bridge Committee of Post-Tensioning Institute
- Participant on the Wind and Seismic Effects Committee of the US-Japan Cooperative Program in Natural Resources.

University Service:

- Faculty senator, 2013, Fall 2015 – Fall 2017.
- Advisor of approximately 50 undergraduate students each semester from Fall 2008 to Spring 2016 and approximately 20 undergraduate students each semester from Fall 2016 to present
- Member of the search committee for a faculty candidate in structural engineering in 2014; Chair of the search committee for a faculty candidate in structure engineering, 2018
- Member of the Curriculum committee and the Awards Committee and Chair of the Scholarship Committee (ended Spring 2018), Department of Civil, Environmental and Construction Engineering