

DOUGLAS A. SMITH, Ph.D., P.E.

PERSONAL DATA

Current Position: Associate Professor

Professional Affiliation: Registered Professional Engineer: Texas (#54301)
New Mexico (#9795)
Mississippi (#17663)

Date of Birth: September 14, 1954

Citizenship: United States

EDUCATION

Texas Tech University, Ph.D. in Civil Engineering, Minor in Statistics, May 1993
Dissertation Title: Stochastic Analysis of Wind Data
Major Professor: Dr. Kishor C. Mehta

Texas Tech University, M.S. in Civil Engineering, August 1979

Texas Tech University, B.S. in Civil Engineering, December 1977

EXPERIENCE

Academic

Full-Time Tenure Track Faculty Status

Associate Professor, Department of Civil Engineering, 9/2003 to present

Assistant Professor, Department of Civil Engineering, 9/1998 to 9/2003

Full-Time Research Faculty Status

Research Assistant Professor, Wind Engineering Research Center, Department of Civil Engineering, 8/1994 to 9/1998

Professional Non-Faculty Status

Research Associate, Wind Engineering Research Center, Department of Civil Engineering, Texas Tech University, 1/1993 to 8/1994

Research Assistant/Graduate Student, Wind Engineering Research Center, Department of Civil Engineering, Texas Tech University, 1/1990 to 1/1993

Non-Academic

Senior Structural Engineer, Utility Engineering Corporation, Amarillo, Texas, 1/1988 to 1/1990

Supervisory Structural Engineer, Southwestern Public Service Company, Amarillo, Texas, 9/1983 to 12/1987

Structural Engineer, Southwestern Public Service Company, Amarillo, Texas, 9/1979 to 8/1983

Research Assistant/Graduate Student, Institute for Disaster Research, Texas Tech University, Lubbock, Texas, 1/1978 to 8/1979

ACADEMIC ACTIVITIES AT TEXAS TECH UNIVERSITY

Courses Taught

CE 3210 Statistics
CE 3303 Mechanics of Solids
CE 3440 Structural Analysis I
CE 4000 Special Problems
CE 4342 Design of Steel Structures
CE 4343 Design of Concrete Structures
CE 5314 Theory of Plates and Shells
CE 5331 Special Problems (Economics)
CE 5341 Wind Engineering Laboratory
CE 5342 Wind Engineering
CE 5331 Structural Reliability
CE 5343 Advanced Design of Concrete Structures
CE 5346 Structural Dynamics I
CE 5347 Structural Dynamics II
CE 5348 Wind Engineering (Lectures on Time Series Methods and Interpretation)
CE 6000 Master's Thesis
CE 6330 Master's Report
CE 7000 Research
CE 8000 Doctoral Dissertation
IS 5000 Graduate Directed Studies

Graduate Faculty Appointments:

Texas Tech University, June, 1995 – present

Colorado State University, November, 1995 - 2000

Graduate Advisory Committees

Graduate Advisory Committees (Chairman)

Ph.D.

- Bi, A. (2006). "Probabilistic assessment of wind loads on a full scale low rise building," Ph.D. Dissertation, Texas Tech University, Lubbock.
- Carter, R. (????). "Load effects on canopies," Ph.D. Dissertation, Texas Tech University, Lubbock.
- Dabral, A. (2006). "Probabilistic damage and loss modeling for metal roof using artificial neural network," Ph.D. Dissertation, Texas Tech University, Lubbock.
- Dannemiller, J. (????). "Damage functions for residential construction," Texas Tech University, Lubbock, Texas.
- Fagan, R. (2001). "Model for time varying loads on a low-rise structure," Ph.D. Dissertation, Texas Tech University, Lubbock.
- Hu, X. (2006). "Wind loading effects and equivalent static wind loading on low-rise buildings," Ph.D. Dissertation, Texas Tech University, Lubbock.
- Lombardo, F. (2009). "Analysis and interpretation of non-stationary wind flow and its effects on a bluff body," Ph.D. Dissertation, Texas Tech University, Lubbock.
- Schroeder, J. (1999). "Hurricane Bonnie wind flow characteristics," Ph.D. Dissertation, Texas Tech University, Lubbock.
- Wayne, S. (????). "A comparison of wind load effects on a sign from full-scale, model-scale and computational methods," Ph.D. Dissertation, Texas Tech University, Lubbock, Texas.
- Widmer, A. (????). "Uncertainties in wind load effects as measured on a low-rise building," Ph.D. Dissertation, Texas Tech University, Lubbock.
- Zhou, N. (2005). "Wind Load Prediction Methodologies and Application to Full Scale Wind Data," Ph.D. Dissertation, Texas Tech University, Lubbock.
- Zhu, H. (2006). "C-130 testings on low-rising buildings," Ph.D. Dissertation, Texas Tech University, Lubbock.

MS

- Alexander, R. (2002). "Modular home construction and stiffness test," Masters Report, Texas Tech University, Lubbock, Texas.
- Allen, E. (2000). "A statistical validation procedure for wind pressure data," Masters Thesis, Texas Tech University, Lubbock, Texas.

- Cai, B. (1999). "Finite element models for residential construction," Masters Report, Texas Tech University, Lubbock, Texas.
- Chappell, K. (2002). "Structural response of a manufactured home to natural and C130 aircraft induced flows," Masters Report, Texas Tech University, Lubbock, Texas.
- Coffman, B. (2007). "Comparison of database-assisted design and ASCE/SEI 7-05 prescribed wind loads on low-rise buildings," Masters Report, Texas Tech University, Lubbock, Texas.
- Jain, S. (2002). "Wind Effects on a full scale frame," Masters Thesis, Texas Tech University, Lubbock, Texas.
- Jokhu, U. (2003). "Roof pressures in the corner region measured on a full scale low-rise building," Masters Thesis, Texas Tech University, Lubbock, Texas.
- Kumar, A. (2001). "Fuzzy-based wind damage model for single-family housing " Masters Thesis, Texas Tech University, Lubbock, Texas.
- Kumar, A. (2005). "Masters Degree Internship Report," Masters Internship Report, Texas Tech University, Lubbock, Texas.
- Laopulsvk, S. (1997). "An approach for improving roof wind uplift resistance for residential construction," Masters Report, Texas Tech University, Lubbock, Texas.
- Long, F. (2004). "Uncertainties in pressure coefficients derived from full and model scale data," Masters Thesis, Texas Tech University, Lubbock, Texas.
- Lu, Y. (1997). "Damage function for building under extreme winds," Masters Report, Texas Tech University, Lubbock, Texas.
- Luo, S. (1996). "Economic investigation of masonry construction for wind resistant design," Masters Thesis, Texas Tech University, Lubbock, Texas.
- Martinez, M. (2004). "Field measurements of wind pressures near wall corners of low-rise buildings," Masters Thesis, Texas Tech University, Lubbock, Texas.
- McElrath, B. (2005). "Uncertainties in wind flow characteristics developed from full scale data," Masters Report, Texas Tech University, Lubbock, Texas.
- Pruitt, R. (2000). "Instrumentation, experiments, and procedures at the WERFL field site," Masters Thesis, Texas Tech University, Lubbock, Texas.
- Pruitt, S. (2001). "The effects of parapet walls on roof pressures measured in full-scale," Masters Thesis, Texas Tech University, Lubbock, Texas.
- Ray, J. (2003). "Application for predicting wind damage," Masters Report, Texas Tech University, Lubbock, Texas.
- Soules, J. G. (2009). "SHARQ 3rd Expansion Project Jubail Industrial City, Kingdom of Saudi Arabia Tankage Works," M.S. Report, Texas Tech University, Lubbock, Texas.

Whitworth, M. R. (2002). "The effects of stationarity on the pressure coefficients measured on a low-rise building " Masters Thesis, Texas Tech University, Lubbock, Texas.

Graduate Advisory Committees (Member):

Ph.D.

Conder, M. (2005). "Characteristics of the quiescent dryline from a case study perspective," Ph.D. Dissertation, Texas Tech University, Lubbock, Texas.

Edwards, R. (2009). "Characterization of hurricane gust factors using observed and analytical data," Ph.D. Dissertation, Texas Tech University, Lubbock, Texas.

Fernandez, C. C. (2001). "Hurricane wind damage simulation using GIS (geographic information system)," Ph.D. Dissertation, Texas Tech University, Lubbock, Texas.

Gardner, A. (2004). "A full-scale investigation of roughness lengths in in-homogeneous terrain and a comparison of wind prediction models for transitional flow regimes," Ph.D. Dissertation, Texas Tech University, Lubbock, Texas.

Gianmanco, I. (????). "In Progress," Ph.D. Dissertation, Texas Tech University, Lubbock, Texas.

Gilliam, X. L. K. (1998). "Statistical techniques for identification of coherent structures by wavelet analysis," Ph.D. Dissertation, Texas Tech University, Lubbock, Texas.

He, H. (2006). "Probabilistic damage estimation model for asphalt shingle roofs," Ph.D. Dissertation, Texas Tech University, Lubbock, Texas.

Hirth, B. (????). "Examination of the coastal transition zone of Hurricane Frances," Texas Tech University, Lubbock.

Huang, G. (2008). "Probabilistic analysis of load effects on tall buildings under stationary and nonstationary extreme winds," Texas Tech University, Lubbock, Texas.

Jang, T. H. (2005). "Random field analysis for cervical spine injury," Ph.D. Dissertation, Texas Tech University, Lubbock, Texas.

Morse, S. M. (2009). "Improvements to and clarification of window glass design methodology," Ph.D. Dissertation, Texas Tech University, Lubbock.

Orwig, K. (????). "In Progress," Ph.D. Dissertation, Texas Tech University, Lubbock, Texas.

Sandri, P. (1996). "An artificial neural network for wind-induced damage potential to nonengineered buildings," Ph.D. Dissertation, Texas Tech University, Lubbock, Texas.

Skwira, G. (2003). "Surface observations of landfalling hurricane rainbands: case studies of hurricane Bonnie (1998) and hurricane Dennis (1999)," Ph.D. Dissertation, Texas Tech University, Lubbock, Texas.

Sonmez, I. (2005). "Determination of the proper site spacing density over Texas," Ph.D. Dissertation, Texas Tech University, Lubbock, Texas.

- Unanwa, C. O. (1997). "A model for probable maximum loss in hurricanes," Ph.D. Dissertation, Texas Tech University, Lubbock, Texas.
- Vega-Avila, R. (2008). "Wind directionality: a reliability based approach," Ph.D. Dissertation, Texas Tech University, Lubbock, Texas.
- Weinbeck, S. (2005). "Development of the West Texas Mesonet and Supporting Instrumentation," Ph.D. Dissertation, Texas Tech University, Lubbock, Texas.
- Wu, F. (2000). "Full-scale study of conical vortices and their effects near roof corners," Ph.D. Dissertation, Texas Tech University, Lubbock, Texas.
- Yin, J. (1996). "Probabilistic study of wind pressures on buildings," Ph.D. Dissertation, Texas Tech University, Lubbock, Texas.
- Zain, M. (2006). "Finite element analysis of storm shelters subjected to blast loads," Ph.D. Dissertation, Texas Tech University, Lubbock, Texas.

MS

- Bird, M. (1998). "Direct measurement of wind loads on a low-rise test building," Masters Thesis, Texas Tech University, Lubbock, Texas.
- Chowdry, N. (2004). "Comparison of wind tunnel pressure measurements on the Texas Tech building," Masters Thesis, Texas Tech University, Lubbock, Texas.
- Conder, M. (1999). "Estimation of roughness lengths through gust factor analysis," Masters Thesis, Texas Tech University, Lubbock, Texas.
- Dey, A. (1995). "Bispectral density computation and its application to time series analysis," Masters Thesis, Texas Tech University, Lubbock, Texas.
- Feng, Y. (1996). "Residential structure retrofit guidance," Masters Report, Texas Tech University, Lubbock, Texas.
- Flanagan, T. (1998). "Hurricane wind fields derived from WSR-88D," Masters Thesis, Texas Tech University, Lubbock, Texas.
- Harris, J. (2003). "Masters Degree Internship Report," Masters Report, Texas Tech University, Lubbock, Texas.
- Jackson, R. (2001). "Load resistance of trapezoidal window glass," Masters Thesis, Texas Tech University, Lubbock, Texas.
- Mackay, T. (2001). "Strain measurements in monolithic and laminated glass," Masters Thesis, Texas Tech University, Lubbock, Texas.
- McAnulty, J. (1998). "Wind load factors for Atlantic and Gulf coast hurricane winds," Masters Thesis,

Texas Tech University, Lubbock, Texas.

Robertson, M. (2003). "Masters Degree Internship Report," Masters Report, Texas Tech University, Lubbock, Texas.

Rodriguez-Mendiata, R. (2000). "Load resistance charts for heat-treated window glass," Masters Thesis, Texas Tech University, Lubbock, Texas.

Schroeder, J. (1997). "Hurricane boundary layer winds," Masters Thesis, Texas Tech University, Lubbock, Texas.

Skwira, G. (1998). "Monte Carlo simulation for the United States Gulf and Atlantic coast," Masters Thesis, Texas Tech University, Lubbock, Texas.

Weinbeck, S. (1997). "Surface layer characteristics of thunderstorm outflow," Masters Thesis, Texas Tech University, Lubbock, Texas.

PROFESSIONAL/UNIVERSITY/SERVICE ACTIVITIES

Professional Short Courses and Invited Lectures

Engineering for Extreme Winds, Short Course at TTU (1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005)

ASCE Wind Loads short course, Dallas, TX, 18-19 November 1999, Orlando FL. 22-23 September, 2005; West Palm Beach FL August 17-18, 2006

Georgia Emergency Management Agency training sessions for emergency managers on assessing performance of essential facilities in hurricanes, Moultrie, GA; Warner Robbins, GA; Savannah, GA; Augusta, GA; Clarksville, GA; Jasper, GA, August - October 1998; Brunswick, GA, February 2001

Wind Effects on Roofing, Corps of Engineers, Belton, TX, May 1997

DOE Natural Phenomena Workshop, Arlington, VA, 1995 (60 participants)

Wind Engineering Research, Short Course at Texas Section ASCE Meeting in Lubbock, TX, 1994

Presentation "Application for Wind Damage Prediction." Georgia Emergency Management Agency, Jekyll Island, Georgia. (1998).

Presentation "Variability in design wind loads." Lubbock County National Weather Service. (1999).

Presentation "Application for Wind Damage Prediction." RICOWI, Las Vegas, Nevada. (2004).

Presentation "WISE Facilities & Capabilities, TTU Full Scale Testing." Florida International University. (2007).

Presentation "Application for Wind Damage Prediction." Orange County National Weather Service. (2004).

Professional Development Activities

ASCE Leadership Conference, 1996

Teaching the Teacher Workshop: Teaching Engineering Faculty to Teach in an Active Learning Environment; A four-day workshop on improving teacher effectiveness, 2000

NATO, Advanced Study Institute, Wind Climate in Cities, 2 wk course in Wind Engineering (1993)

Professional Committee Activities

ASCE 7 Task Committee on Wind Loads, 2001-present

Organizing Committee, 10th International Conference on Wind Engineering, 2001- 2003

Publications Committee, 10th International Conference on Wind Engineering, 2001- 2003

American Association of Wind Engineering Organizing Committee, America's Conference on Wind Engineering, 1999-2001

ASCE- Computer-aided Wind Engineering Subcommittee, 1998-1999

ASCE-Wind Effects Committee of ASCE, 1994-1999

Organized Session on Wind Effects on Low Rise Buildings (Structures Congress, 1996)

Texas Section ASCE, Caprock Branch, Vice President/Treasurer (1995-1996), President (1996-1997), Past-President (1997-1998); Board of Directors (1999-2001)

Chairman of the ASCE Texas Section Structural Division, 1988

American Association for Wind Engineering (Board of Directors 2007 - present, Member)

American Society of Civil Engineers (Member)

American Institute for Steel Construction (Member)

Structural Engineers Association of Texas (Member)

University Committees

High End Computing Resources, 1994

High Performance Computing Committee, 1999-2001

General Education Committee 2008 – 2009

Academic Program Review of Graduate Programs in the College of Architecture Committee 2009

College Committees

College of Engineering Awards Committee, 2002 – 2004

Academic Programs Committee 2007 - present

Departmental Committees/Service

Civil Engineering HEAF Committee, 1999-2004

CE Curriculum Committee, 1999-2003

Chair of CE Curriculum Committee 2003 - present

Fundamentals of Engineering Exam Review for Design of Steel and Concrete Structures, Spring and Fall of 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008

Strategic Planning Committee for Wind Engineering Program, 1995, 2000, 2001

Search Committee for Assistant Professor in Civil Engineering 2002

Search Committee for Director of Water Resources 2002

Search Committee for Chair of Civil Engineering Department 2002- 2003

Search Committee for Director of Wind Science and Engineering 2002 – 2003

Search Committee for CE structural position in CE 2003 – 2004

Chair of Search Committee for Assistant Professor Position in Structural Design 2004 - 2005

Ad Hoc Committee of young faculty to develop a strategic plan for replacing retiring faculty in the CE Department 2002

Chair of Search Committee for Assistant Professor Position in Structural Design 2008

Search Committee for two Assistant Professor Positions in Structural Design 2008-2009

Outreach/Promotional

Faculty-in-charge, Shake Hands with Your Future-Engineering, 2-week course for Gifted and Talented students (3 sessions, Summer 1996; 2 sessions Summers 1997, 1998)

Interviews with media including programs for the Learning Channel, ABC World News Tonight, and Discovery Channel.

Presentation on wind engineering, Rotary Club, Lubbock, October 30, 1998.

Consulting on Wind-Related Problems

Damage to residential construction due to Hurricane Ike (2008 – present) Various clients

Damage to residential construction due to Hurricane Ivan (2008 – present) Various clients

Damage to residential construction due to Hurricane Katrina (2005 – present) Various clients

Collapse of a fuel storage dome in Jacksonville, FL (2005) Adorno and Yoss

Wind Speeds at the Ho-Ping, Taiwan Power Plant (2005) Geometrica

Collapse of a fuel storage dome in Jacksonville, FL (2004) C.E. Rhodes, Haynes and Boone, LLP

Wind damage investigation of a residence (2000) Gibson, Ochsner, and Adkins, LLP:

Tornado hazard assessment for a low-level radioactive waste disposal facility (2000) Lockwood, Andrews and Newnam

Full-scale measurements on a manufactured house (1999) Idaho National Engineering and Environmental Laboratory

Modifications to boiler structures for varying siting criteria (1999) Utility Engineering Corporation

Collapse of an apartment building under construction (1998-1999) A&G Contractors

Wind damage investigation of a residence (1998) Crenshaw, Dupree and Milam, LLP

Collapse of a masonry wall under construction (1998) Scott, Hulse, Marshall, Fueille, and Thurmond, P.C.,

Design guidelines for wind resistant construction (1996) FEMA

Failure investigation of an elevated 12,000 gallon sulfuric acid storage tank (1993) Saint Paul Insurance Company

Wind loads for a transmission line across Tacoma Narrows, Washington (1991) Scott and Scott Consultants

RESEARCH

Research Projects

Co-PI. (1994). "Dynamic Response - Tied Arch Bridges, US 59 Houston." Texas Department of Transportation, \$12393.15 (33% of \$37,179.15), 9/1/1994 -- 8/31/1995

Co-PI. (1995). "CSU/TTU Cooperative wind engineering program." National Science Foundation, \$218,043.80 (20% of \$1,090,219), 1/15/1995 -- 6/30/2000

- Co-PI. (1995). "Insurance Institute for Property Loss Reduction/WIND-RITE." Insurance Institute for Property Loss Reduction, \$20,823.00 (33% of \$63,100), 4/1/1995 -- 1/15/1996
- Co-PI. (1995). "Wind Load Standards Compliance Methodologies." Florida Housing Finance, \$55,000.00 (20% of \$275,000), 1/3/1995 -- 1/15/1996
- Co-PI. (1996). "Development of design guidelines for the National Greenhouse Manufacturer's Association." National Greenhouse Manufacturer's Association, \$5000.00 (50% of \$10,000), 1/15/1996 -- 12/31/1996
- Co-PI. (1996). "Performance evaluation of essential facilities in severe windstorm." Georgia Emergency Management Agency, \$149,374.00 (50% of \$298,784), 8/1/1996 -- 12/31/1998
- Co-PI. (1996). "Wind Damage Prediction Using Doppler Radar." THECB - ARP95, \$74,429.00 (50% of \$148,858), 1/1/1996 -- 12/31/1997
- Co-PI. (1996 - 2001). "Multiple user training for wind effects on structures software." Georgia Emergency Management Agency, \$13,878 (50% of \$27,756), 8/1/1996 -- 12/31/2001
- Co-PI. (1997). "An investigation of load factors for combined wind and flood." American Society of Civil Engineers, \$60,000.00 (75% of \$80,000), 3/20/1997 -- 6/20/1998
- Co-PI. (1998). "Wind and building pressure field data and its simulation in the laboratory." Idaho National Engineering Laboratory, \$24,874.00 (33% of \$75,376), 11/20/2000 -- 6/30/2001
- Co-PI. (1998 - 2000). "Windstorm Mitigation Initiative." National Institute of Standards and Technology, \$360,194.20 (10% of \$3,601,942.00), 8/1/1998 - 1/15/2000
- Co-PI. (1998 - 2000). "Windstorm Mitigation Initiative (Year 2)." National Institute of Standards and Technology, \$147,824.04 (13% of \$1,137,108), 5/31/1998 -- 9/30/2000
- Co-PI. (1999). "Computer catastrophe insurance loss models." Foundation insurance regulatory studies in TX, \$49,889.5 (50% of \$99,779), 4/1/1999 -- 1/31/2000
- Co-PI. (1999 - 2001). "The development of an integrated system of instrumentation and equipment to measure atmospheric boundary layer winds and their effects on built structures." National Science Foundation, \$42,509.00 (20% of \$212,545), 9/1/1999 -- 8/31/2001
- Co-PI. (1999 - 2001). "Texas Tech University Connectivity to the vBNS." National Science Foundation, \$56,000 (16% of \$350,000), 8/1/1999 -- 7/31/2001
- Co-PI. (2000 - 2001). "Windstorm Mitigation Initiative (Year 3)." National Institute of Standards and Technology, \$116,019.00 (9% of \$1,289,100), 10/1/2000 -- 9/30/2001
- Co-PI. (2001). "Mobile models for GEMA." Georgia Emergency Management Agency, \$12,500.00 (50% of \$25,000), 2/1/2001 -- 9/30/2001
- Co-PI. (2001 - 2002). "Windstorm Mitigation Initiative (Year 4)." National Institute of Standards and Technology, \$238,416.30 (15% of \$4,589,442), 10/1/2001 -- 9/30/2002
- Co-PI. (2003-2007). "Multidisciplinary doctoral program in Wind Science and Engineering." National Science Foundation, \$175,746.15,

- Co-PI. (2003 - 2005). "Windstorm Mitigation Initiative (Year 6)." National Institute of Standards and Technology, \$711,349.20 (18% of \$3,951,940), 10/1/2003 -- 9/30/2005
- Co-PI. (2004 - 2005). "Windstorm Mitigation Initiative (Year 7)." National Institute of Standards and Technology, \$263,199.86 (14% of \$1,879,999), 10/1/2004 -- 9/30/2005
- Co-PI. (2008). "Great Plains Wind Power Test Facility." Department of Energy, \$39,360, 3/15/2008 - 7/1/2008
- Co-PI. (2008-2009). "Sign tests in the field and in the wind tunnel." International Sign Association, \$24,503, 8/19/2008 - 6/18/2009
- PI. (2000). "Training for Georgia Emergency Management Agency." Georgia Emergency Management Agency, \$15,961.00 (100% of \$15,961),
- PI. (2008). "Transmission line failure and retrofit study." Oncor Electric Delivery, \$54,140, 5/21/2008 - 3/31/2009
- Co-PI. (2009-2010). "6495-TxDOT and Electric Power Transmission Lines." Texas Department of Transportation, \$24,170.75 (25% of \$96,683), 9/1/2009 - 8/31/2010
- Co-PI (2009). "Dallas Cowboys Practice Facility Collapse Reconnaissance - Expert Peer Review," National Institute of Standards and Technology, \$2,655.00 (90% of \$2,950.00), 7/2009 – 12/2009

PUBLICATIONS

Refereed Publications

- Dunyak, J., Gilliam, X., Peterson, R., and Smith, D. (1998). "Coherent gust detection by wavelet transform." *Journal of Wind Engineering and Industrial Aerodynamics*, 77-78, 467.
- Ewing, B., Kruse, J., Schroeder, J. L., and Smith, D. A. (2004). "Time Series Analysis of Wind Speed Using VAR and the Generalized Impulse Response Technique." *Wind Engineering and Industrial Aerodynamics*.
- Ewing, B. T., Kruse, J. B., Schroeder, J. L., and Smith, D. A. (2007). "Time series analysis of wind speed using VAR and the generalized impulse response technique." *Journal of Wind Engineering and Industrial Aerodynamics*, 95(3), 209.
- Gilliam, X., Dunyak, J., Doggett, A., and Smith, D. (2000). "Coherent structure detection using wavelet analysis in long time-series." *Journal of Wind Engineering and Industrial Aerodynamics*, 88(2-3), 183-195.
- Gilliam, X., Dunyak, J. P., Smith, D. A., and Wu, F. (2004). "Using projection pursuit and proper orthogonal decomposition to identify independent flow mechanisms." *Journal of Wind Engineering and Industrial Aerodynamics*, 92, 53 - 69.

- Mehta, K. C., McDonald, J. R., and Smith, D. A. (1981). "Procedure for Predicting Wind Damage to Buildings." *Journal of the Structural Division*, 107(11), 2089.
- Schroeder, J. L., and Smith, D. A. (2003). "Hurricane Bonnie wind flow characteristics as determined from WEMITE." *Journal of Wind Engineering and Industrial Aerodynamics*, 91(6), 767.
- Schroeder, J. L., Smith, D. A., and Peterson, R. E. (1998). "Variation of turbulence intensities and integral scales during the passage of a hurricane." *Journal of Wind Engineering and Industrial Aerodynamics*, 77-78, 65.
- Simmons, K. M., Kruse, J. B., and Smith, D. A. (2002). "Valuing Mitigation: Real Estate Market Response to Hurricane Loss Reduction Measures." *Southern Economics Journal*, 68, 660 - 671.
- Smith, D. A., Carter, R. R., Mehta, K. C., and Morse, S. (2008 (submitted)). "Upgrades, Updates and New Results for the Wind Engineering Research Field Laboratory Test Building." *Journal of Wind Engineering and Industrial Aerodynamics*.
- Smith, D. A., and Mehta, K. C. (1993). "Investigation of stationary and nonstationary wind data using classical Box-Jenkins models." *Journal of Wind Engineering and Industrial Aerodynamics*, 49(1-3 pt 1), 319.
- Smith, D. A., Mehta, K. C., Yeatts, B. B., and Bhavaraju, S. V. (1994). "Area-averaged and internal pressure coefficients measured in the field." *Journal of Wind Engineering and Industrial Aerodynamics*, 53(1-2), 89.
- Unanwa, C. O., McDonald, J. R., Mehta, K. C., and Smith, D. A. (2000). "Development of wind damage bands for buildings." *Journal of Wind Engineering and Industrial Aerodynamics*, 84(1), 119.

Publications in Proceedings and Other Sources

- Bi, A., and Smith, D. A. (2005) "Wall-Area-averaged Pressure Coefficients Measured in Full-Scale." *10th Americas Conference on Wind Engineering*, Baton Rouge, LA.
- Carter, R. R., and Smith, D. A. (2009). "Parapet Effects on Full-Scale Wind-Induced Pressures." *11th Americas Conference on Wind Engineering*, San Juan, Puerto Rico.
- Conder, M., Peterson, R. E., Schroeder, J. L., and Smith, D. A. (1999) "Comparison of hurricane wind data during Hurricane Bonnie: The Texas Tech Wind Engineering Mobile Instrumented Tower Experiment (WEMITE) and the NWS Wilmington ASOS." *13th Symposium on Boundary Layers and Turbulence*, Dallas, TX, 484-487.
- Conder, M., Peterson, R. E., and Smith, D. A. (1999) "Application of gust factor analysis to hurricane wind data." *23rd Conference on Hurricanes and Tropical Meteorology*, Dallas, TX, 439-441.
- Conder, M. R., Peterson, R. E., Schroeder, J. L., and Smith, D. A. (2003) "An Analysis of Wind Characteristics during the ERODE Experiment, April-May 2002." *11th International Conference on Wind Engineering*, Lubbock, TX.
- Conder, M. R., Peterson, R. E., and Smith, D. A. (2001) "Gust factor analysis of tropical cyclone winds." *Third European and African Conference on Wind Engineering*, pp. 555-559.
- Conder, M. R., Peterson, R. E., and Smith, D. A. (2001) "Site characterization of the Texas Tech Wind

- Engineering Research Field laboratory (WERFL)." *Third European and African Conference on Wind Engineering*, pp. 587-590.
- Dunyak, J., Doggett, A., Gilliam, X., and Smith, D. A. (2000) "Characterizing turbulence in non-stationary winds." *14th Symposium on Boundary Layer and Turbulence*, Aspen, CO.
- Dunyak, J., Gilliam, X., Peterson, R. E., and Smith, D. A. (1997) "Coherent gust detection by wavelet transform." *Eighth U.S. National Conference on Wind Engineering*, Baltimore, MD, 9.
- Dunyak, J., Gilliam, X., Peterson, R. E., and Smith, D. A. (1999) "Detection of coherent structures in long time series using wavelet transforms." *Mathematical Theory of Networks and Systems*, Padova, Italy, 783-786.
- Dunyak, J., Gilliam, X., Smith, D. A., and Doggett, A. (2000) "Parametric spectral estimation for full-scale wind time-series." *8th ASCE Specialty Conference on Probabilistic Mechanics and Structural Reliability*, University of Notre Dame, South Bend, Indiana.
- Dunyak, J., Gilliam, X., Smith, D. A., and Wu, F. (2000) "Proper orthogonal decomposition modeling for full-scale pressure fields." *14th Engineering Mechanics Conference*, Austin Texas.
- Dunyak, J., Wu, F., Gilliam, X., and Smith, D. A. (1999) "Proper orthogonal decomposition modeling for intermittent flow." *Wind Engineering into the 21st Century, 10th International Conference on Wind Engineering*, Copenhagen, Denmark, 417-422.
- Fagan, R., Dunyak, J., Gilliam, X., and 2001, D. A. S. (2001) "Overall wind loads on a low-rise building measured in the field." *Ninth Americas Conference on Wind Engineering*, Clemson University, Clemson, S.C, 3-6 June.
- Fagan, R., Dunyak, J., Gilliam, X., and Smith, D. A. (2000) "System identification of wind loads on low-rise buildings." *14th Engineering Mechanics Conference*, Austin Texas.
- Flanagan, T., Peterson, R., and Smith, D. A. (1997) "The relationship between low-level NEXRAD winds and hurricane damage patterns." *22nd Conference on Hurricanes and Tropical Meteorology*, Ft. Collins, CO, 146-147.
- Flanagan, T. R., Lu, Y., Peterson, R. E., and Smith, D. A. (1997) "The relationship between low-Level NEXRAD winds and hurricane damage patterns." *National Hurricane Conference*, Houston, TX.
- Flanagan, T. R., Peterson, R. E., and Smith, D. A. (1997) "Relationship between low-level NEXRAD winds and hurricane damage patterns." Austin, TX, USA, 584.
- Flanagan, T. R., Peterson, R. E., and Smith, D. A. (1997) "The relationship between low-level NEXRAD winds and hurricane damage patterns." *28th Conference on Radar Meteorology*, Austin, TX, 584-585.
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HONORS AND AWARDS

Elected to Texas Tech University Teaching Academy 2005

Nominated for the Abel-Hangar Teaching Award 2005

Nominated for the Spenser Wells Award 2003

Halliburton Faculty Teaching Award 2001-2002

Civil Engineering Teacher of the Year 2002

Elected to the Civil Engineering Academy, Texas Tech University, 1995

Texas Engineering Foundation Graduate Student Scholarship, 1991

Honorary Student Organizations:

Tau Beta Pi Phi Kappa Phi Sigma Xi Chi Epsilon Phi Theta Kappa