

RESUME

Dr. Sez Atamturktur

PERSONAL DATA

Provost's Distinguished Professor
Environmental Engineering and Earth Sciences
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EDUCATION

Ph.D., The Pennsylvania State University, 2009, Civil Engineering – Structures
M.S., The Pennsylvania State University, 2006, Architectural Engineering – Structures
B.S., Orta Dogu Teknik Universitesi (ODTU), 2002, Architecture
B.S. (minor), Orta Dogu Teknik Universitesi (ODTU), 2002, Civil Engineering – Structures

PROFESSIONAL EXPERIENCE

Professor of Environmental Engineering and Earth Sciences; Mechanical Engineering; Industrial Engineering and Civil Engineering, 2017-present.

Provost's Distinguished Professor, Clemson University, 2017-present.

Assistant Vice-President for Research, Division of Research, Clemson University, 2017-present

Founding Director of the Office of Research Development, Division of Research, Clemson University, 2017-present.

Founding Director, NSF NRT-funded Resilient Infrastructure and Environmental Systems (RIES) Engineering and Science Degree Programs, 2016-present.

Founding Director, NSF ADVANCE-funded Tigers ADVANCE Program, 2016-present.

Co-Director, Center of Excellence for Next Generation Computing and Creativity, 2016-2017.

Distinguished Professor of Intelligent Infrastructure, Glenn Department of Civil Engineering, Clemson University, 2015-2017.

Visiting Professor in College of Civil Engineering, Tongji University, China, 2015-present.

Associate Professor of Civil Engineering, Clemson University, 2013-present.

Visiting Professor in the Department of Applied Mechanics, University of Franche-Comté, France, 2013.

Assistant Professor of Civil Engineering, Clemson University, 2010-2013,

LTV Technical Staff Member in Applied Physics Division, Los Alamos National Laboratory, 2009.

Research and Teaching Assistant, The Pennsylvania State University, 2004-2009,

Graduate Research Assistant in Applied Physics Division, Los Alamos National Laboratory, 2008.

Visiting Research Assistant in the Department of Civil Engineering, University of Sheffield UK, 2007.

PROFESSIONAL ACTIVITIES

Participation in Technical Committees

Executive Board Member, Member at Large, Society of Experimental Mechanics, since 2016.

Associate editor of American Society of Mechanical Engineering (ASME), Journal of Verification and Validation, since 2016.

Scientific Advisory Board Member, International Conference on Uncertainty in Mechanical Engineering (ICUME), Darmstadt, Germany, 2015

Elected Member, American Society of Mechanical Engineers Verification and Validation (V&V10) Technical Committee, since 2014.

Advisory Board member, SIGMA Journal of Engineering and Natural Sciences, (2013-present)

Chair, Model Validation & Uncertainty Quantification Technical Division, Society of Experimental Mechanics, since 2013.

Corresponding Member, Masonry Standards Joint Committee, General Requirements subcommittee, since 2013.

Corresponding Member, Masonry Standards Joint Committee, Flexure, Axial, and Shear subcommittee, since 2013.

Member, Dry-Stack Masonry Technical Division, The Masonry Society, since 2013.

Advisory Board member, BUILT, International Journal of Building, Urban, Interior and Landscape Technology, (<http://builtjournal.org/>), since 2011.

Vice-chair, Model Validation & Uncertainty Quantification Technical Division, Society of Experimental Mechanics, 2011-2013.

Secretary, Model Validation & Uncertainty Quantification Technical Division, Society of Experimental Mechanics, 2009-2011

Member, Existing Masonry Technical Division, The Masonry Society, since 2009.

Member, Civil Structures Testing Technical Division, Society of Experimental Mechanics, since 2007.

Chaired and Organized Sessions at Technical Conferences

Session Coordinator, ASME ASCE Resiliency of Urban Tunnels Workshop, Washington D.C., 2016.

Session Chair, Verification Methods: Session 2, ASME Verification and Validation Conference, Las Vegas, NV, 2016.

Session Organizer and Chair, Resource Allocation in Model Validation and Uncertainty Quantification, 33rd International Modal Analysis Conference, Orlando, FL, 2015.

Session Chair, Topics in Verification and Validation: Part 2, ASME Verification and Validation Conference, Las Vegas, NV, 2014.

Session Chair, Validation Methods: Part 2, ASME Verification and Validation Conference, Las Vegas, NV, 2014.

Session Organizer and Chair, Uncertainty Quantification & Model Validation, 32nd International Modal Analysis Conference, Orlando, FL, 2014.

Session Chair, Modal Parameter Identification, 32nd International Modal Analysis Conference, Orlando, FL, 2014.

Session Chair, Experimental Techniques for Civil Structures, 32nd International Modal Analysis Conference, Orlando, FL, 2014.

Session Chair, Structural Modeling for Civil Structures II, 31st International Modal Analysis Conference, Garden Grove, CA, 2013.

Session Chair, Experimental Techniques and Modeling of Civil Structures, 30th International Modal Analysis Conference, Jacksonville, FL, 2012.

Session Organizer and Chair, Model Validation & Uncertainty Quantification, 29th International Modal Analysis Conference, Jacksonville, FL, 2011.

Session Organizer and Chair for two sessions: Model Validation & Uncertainty Quantification I & II, 28th International Modal Analysis Conference, Jacksonville, FL, 2010.

Session Chair, Damage Detection and Modeling Civil Structures, 28th International Modal Analysis Conference, Jacksonville, FL, 2010.

Session Chair, Model Validation & Uncertainty Quantification, 27th International Modal Analysis Conference, Orlando, FL, 2009.

Journals served as Reviewer

Reviewer for 45 different journals

Journal of Process Mechanical Engineering, since 2016.

Structure and Infrastructure Engineering, since 2016.

Mechanics Based Design of Structures and Machines, An International Journal, since 2016.

Earthquake Engineering and Engineering Vibration, since 2016.

Expert Systems with Applications, since 2016.

Computer-Aided Civil and Infrastructure Engineering, since 2015.

Journal of Automation in Construction, since 2015.

Journal Reviewer, Computers and Industrial Engineering, since 2015.

Sigma Journal of Engineering and Natural Sciences, since 2015.

The Open Construction and Building Technology Journal, since 2015.

ASME Journal of Verification, Validation and Uncertainty Quantification, since 2015.

Mechanical Systems and Signal Processing, since 2015.

Sensors, since 2015.

ACI Structural Journal, since 2015.
Nondestructive Testing and Evaluation, since 2015.
Sustainability, since 2015.
Applied Mathematical Modelling, since 2015.
Flow Measurement and Instrumentation, since 2015.
BUILT, since 2015.
Structures and Buildings, since 2015.
Advances in Masonry Materials and Structures: Experimental & Numerical Modelling Aspects, since 2015.
Computers & Industrial Engineering, since 2014.
Structural and Multi-Disciplinary Optimization, since 2014.
Multidiscipline Modeling in Materials and Structures, since 2014.
Journal of Sound and Vibration, since 2014.
Buildings, since 2014.
Structural Engineering and Mechanics, An International Journal, since 2014.
Mechanics of Advanced Materials and Structures, since 2013.
ASCE Journal of Structural Engineering, since 2013.
Journal of Earthquake Engineering, since 2013.
Review of Applied Physics, since 2013.
International Journal of Building, Urban, Interior and Landscape Technology, since 2012.
Journal of the International Society for the Prevention and Mitigation of Natural Hazards, since 2012.
Journal of Vibration and Control, since 2012.
ASCE Journal of Computing in Civil Engineering, since 2012.
International Journal for Uncertainty Quantification, since 2011.
The Structural Design of Tall and Special Buildings, since 2011.
ICE Forensic Engineering, since 2011.
ICE Buildings and Structures, since 2010.
ASCE Journal of Performance of Constructed Facilities, since 2009.
ASCE Journal of Architectural Engineering, since 2009.
ASTM Journal of Testing and Evaluation, since 2009.
The Masonry Society Journal, since 2009.
Engineering Structures, since 2009.
Experimental Techniques, since 2007.

Funding Agencies served as Reviewer

Reviewer for 7 different funding agencies

Swiss National Science Foundation, since 2016.

Chilean National Science and Technology Commission, since 2015.

U.S. Department of Energy, The Nuclear Energy University Programs, since 2013.

National Science Foundation, since 2011.

Davidson Fellows Program, since 2012.

The Leverhulme Trust, 2013.

METRANS Transportation Center, 2011.

MEMBERSHIPS

Member, American Society of Mechanical Engineers, ASCE, since 2014.

Member, American Concrete Institute, since 2012.

Member, The American Institute of Aeronautics and Astronautics, AIAA, since 2009.

Member, The Masonry Society, TMS, since 2006.

Member, American Society of Civil Engineers, ASCE, since 2006.

Member, Society of Experimental Mechanics, SEM, since 2005.

PUBLICATIONS

Doctoral Dissertation

Calibration under Uncertainty for Finite Element Models of Masonry Monuments, Doctoral Dissertation in Civil and Environmental Engineering, Pennsylvania State University, advised by Drs. Jeffrey Laman and Thomas E. Boothby, 2009

Master Thesis

Structural assessment of Guastavino domes, Master Thesis in Architectural Engineering, Pennsylvania State University, advised by Dr. Thomas E. Boothby, 2006

Refereed Journal Publications (in review / in preparation)

** indicates Atamturktur's graduate students*

Prabhu S.*, **Atamturktur S.** and Dorrance R. (conditionally accepted, in review), "Investigating the Cracks in Granite Slabs at Fort Sumter through Computer Modeling," *APT Bulletin*.

Martinez M.*, **Atamturktur S.**, Ross B. and Thompson J. (conditionally accepted, in review), "A Combined Numerical and Experimental Analysis of Dry-Stack Construction" *ASCE Journal of Structural Engineering*.

Stevens G.N.*, **Atamturktur S.**, Brown D.A., Williams B.J. and Unal C. (submitted, in review), "Statistical Inference of Empirical Constituents in Partitioned Analysis from Integral-effect Experiments: An Application in Thermo-Mechanical Coupling," *Engineering Computation (Emerald)*.

Martinez M.*, **Atamturktur** S., (in preparation), “Experimental and Numerical Evaluation of Reinforced Dry-Stacked Concrete Masonry Walls” *Elsevier Building Engineering*.

Prabhu, S., Ehrett, C., Brown, A., Javanbarg, M., **Atamturktur**, S., (in preparation), “Uncertainty Quantification in Fault Tree Analysis: An Application for Business Interruption due to Seismic Hazard,” *Risk Analysis*.

Prabhu, S., Javanbarg, M., **Atamturktur**, S., (in preparation), “Multi-hazard Risk Assessment of Industrial Facilities,” *Journal of Risk Research*.

Hu X.*, Gupte A., and **Atamturktur** S., (in preparation), “Extended Constitutive Relation Error and Multi-Harmonic Balance Approach for Model Updating of Locally Nonlinear Structures” *Elsevier Computers and Structures*.

Martinez M.*, **Atamturktur** S., Sanders J. (in preparation), “Structural and Thermal Behavior to Appraise and Optimize Concrete Masonry Units via Experimental Testing and Numerical Modeling,” *Energy and Buildings*.

Hu X.*, and **Atamturktur** S., (in preparation), “Extended Constitutive Relation Error Based Damage Detection Approach Considering the Effect of Stiffness and Mass” *Mechanical Systems and Signal Processing*.

Chodora E., Ehrett C., Jiang M., Brown, A., Kitchens, C., **Atamturktur**, S. (in preparation), “Design of Engineering Materials under Uncertainty,” *Springer Research in Engineering Design*.

Locke R.*, Sybrandt J., Safro I., and **Atamturktur** S., (in preparation), “Filtering out Environmental Effects from the Dynamic Response of Passing Vehicles” *ASCE Journal of Structural Engineering*.

Martinez M.*, **Atamturktur** S., (in preparation), “Concrete Masonry Construction Evaluation: A Review of Experimental Tests and Numerical Models,” *Construction and Building Materials*.

Refereed Journal Publications (in print / printed)

* indicates Atamturktur's graduate students

** indicates other graduate students

Publications in 2017

Prabhu, S.*, **Atamturktur**, S. and Cogan, S. (2017), "Model assessment in scientific computing: Considering robustness to uncertainty in input parameters. *Engineering Computations*, Vol. 34 Issue: 5, pp. 1700-1723.

Yazdekhashti S., Piratla K. R., **Atamturktur** S., and Khan A. (in print), “Experimental Evaluation of a Vibration-Based Leak-Detection Technique for Water Pipelines,” *Journal of Resources, Conservation and Recycling (Elsevier)*, (Impact factor: 3.82) <http://dx.doi.org/10.1080/15732479.2017.1327544>

Hu X.*, Prabhu S.*, **Atamturktur** S. and Cogan, S. (2017), “Mechanistically-Informed Damage Detection Using Dynamic Measurements: Extended Constitutive Relation Error,” *Mechanical Systems and Signal Processing*, Vol. 85, pp. 312-328. (Impact factor: 2.77).

Brown A. and **Atamturktur** S. (in print), “Nonparametric Functional Calibration of Computer Models,” *Statistica Sinica (Institute of Statistical Science)*, DoI: 10.5705/ss.202015.0344. (Impact factor: 1.24).

Bi, S.** , Prabhu, S.* , Cogan, S. and **Atamturktur**, S. (2017), "Uncertainty Quantification Metrics with Varying Statistical Information in Model Calibration and Validation," *AIAA Journal*, Vol. 55, No. 10, pp. 3570-3583.

Prabhu, S.* and **Atamturktur**, S. (2017), "Assessment of Strength Degradation due to Damage using a Load Path based Approach," *Journal of Structural Engineering (ASCE)*, Vol. 143, No. 9.

Stevens, G.* and **Atamturktur**, S., (2017), "Mitigating Error and Uncertainty in Partitioned Analysis: A Review of Verification, Calibration and Validation Methods for Coupled Simulations," *Archives of Computational Methods in Engineering*, Vol. 24, No. 3, pp. 557-571. **(Impact factor: 4.2).**

Atamturktur, S., Ross, B., Thompson, J. and Biggs, D. (2017), "Compressive Strength of Dry-Stacked Concrete Masonry Unit Assemblies." *Journal of Materials in Civil Engineering*, Vol. 29, No. 2. **(Impact factor: 1.63)**

Publications in 2016 (7 total)

Khan, S. M., **Atamturktur**, S., Chowdhury, M., and Rahman, M, (2016), "Integration of structural health monitoring and intelligent transportation systems for bridge condition assessment: current status and future direction." *IEEE Transactions on Intelligent Transportation Systems*, Vol. 17, No. 8, pp. 2107-2122. **(Impact factor: 2.53).**

Lu J.* , **Atamturktur** S. and Huang Y. (2016), "Bilevel Resource Allocation Framework for Retrofitting Bridges in a Transportation Network," *TRB Journal*, Vol. 2550, pp. 31-37, **(Impact factor: 0.77).**

Stevens G.* , **Atamturktur** S., Lebensohn R. and Kaschner G. (2016), "Experiment-Based Validation and Uncertainty Quantification of Coupled Multi-scale Plasticity Models," *Multidiscipline Modeling in Materials and Structures (Emerald)*, Vol. 12, No. 1, pp. 151-176 **(Impact factor: 0.36, new journal).**

Yazdekhosti S.* , Piratla K. R., **Atamturktur** S. and Khan A. (2016), "Experimental Verification of a Novel Vibration-Based Technique for Detecting Water Pipeline Leakage," *Journal of Structure and Infrastructure Engineering (Taylor and Francis)*, pp. 1-12, (Impact factor: 1.20).

Ross B., Roper B.* and **Atamturktur** S. (2016), "Detailing Steel Roof Decks to Control Damage from Windborne Debris Impact," *Practice Periodical on Structural Design and Construction (ASCE)*, Vol. 21, No. 1, 04015010, (Impact factor: 0.39).

Sevim B., **Atamturktur** S., Altunisik A.C. and Bayraktar A. (2016), "Ambient Vibration Testing and Seismic Behavior of Historical Arch Bridges under Near and Far Fault Ground Motions," *Bulletin of Earthquake Engineering (Springer)*, Vol. 14, No. 1, pp. 241-259, **(Impact factor: 1.56).**

Publications in 2015 (11 total)

Atamturktur S. and Farajpour I.* (2015), "Resource Allocation for Code Development in Partitioned Models," *Engineering Computations: International Journal for Computer-Aided Engineering and Software (Emerald)*, Vol.32, No. 7, pp. 1981-2004 (Impact factor: 0.691).

Atamturktur S., Egeberg M.* , Stevens G.* and Hemez F. (2015), "Defining Coverage of an Operational Domain Using a Modified Nearest-Neighbor Metric," *Mechanical Systems and Signal Processing (Elsevier)*, Vol. 50-51, pp. 349-361, **(Impact factor: 2.77).**

Gong W.* , Huang H., Juang C. H., **Atamturktur** S. and Brownlow A.** (2015), "Improved Shield Tunnel Design Methodology Incorporating Design Robustness," *Canadian Geotechnical Journal*, Vol. 52, No. 10, pp. 1575-1591, **(Impact factor: 1.88).**

Khoshnevisan S.***, Gong W.*, Juang C.H. and **Atamturktur S.** (2015), “Efficient Robust Geotechnical Design of Drilled Shafts in Clay using a Spreadsheet,” *Journal of Geotechnical and Geoenvironmental Engineering (ASCE)*, Vol. 141, No. 2, (Impact factor: 1.47).

Prabhu P.* and **Atamturktur S.** (2015), “A Review on Prognostic Evaluation of Historic Masonry Structures: Present Challenges and Future Direction,” *The Masonry Society Journal*, Vol. 33, No. 1, pp. 1-12, (Impact factor: 2.0).

Atamturktur S., Farajpour I.*, Prabhu S.* and Haydock A.* (2015), “Adaptively Weighted Support Vector Regression: Prognostic Application to a Historic Masonry Fort,” *Journal of Performance of Constructed Facilities (ASCE)*, Vol. 29, No. 2, (Impact factor: 0.7).

Atamturktur S., Hegenderfer J.*, Williams B. and Unal C. (2015), “Selection Criterion Based on an Exploration-Exploitation Approach for Optimal Design of Experiments,” *Journal of Engineering Mechanics (ASCE)*, Vol. 141, No. 1, (Impact factor: 1.2).

Atamturktur S., Hegenderfer J.*, Williams B., Egeberg M.*, Lebensohn R. and Unal C. (2015), “A Resource Allocation Framework for Experiment-Based Validation of Numerical Models,” *Journal of Mechanics of Advanced Materials and Structures (Taylor & Francis)*, Vol. 22, No. 8, pp. 641-654 (Impact factor: 0.67).

Atamturktur S., Stevens G.*, Van Buren K.* and Wheeler E.* (2015), “Assessing the Trade-offs of Fidelity, Robustness, and Self-Consistency for Model Parameter Identification,” *Engineering Computations: International Journal for Computer-Aided Engineering and Software (Emerald)*, Vol. 32, No. 2, (Impact factor: 0.69). (Cannot find this paper anywhere, I believe reference is incorrect).

Atamturktur S., Liu Z.*, Cogan S. and Juang C. H. (2015), “Calibration of Imprecise and Inaccurate Numerical Models Considering Fidelity and Robustness: A Multi-Objective Optimization Based Approach,” *Structural and Multi-disciplinary Optimization (Springer)*, Vol. 51, No. 3, pp. 659-671, (Impact factor: 2.21).

Stevens G.*, Van Buren K.*, Wheeler E.* and **Atamturktur S.** (2015), “Evaluating the Fidelity and Robustness of Calibrated Numerical Model Predictions: An Application on a Wind Turbine Blade,” *Engineering Computations: International Journal for Computer-Aided Engineering and Software (Emerald)*, Vol. 32, No. 3, pp. 621-642, (Impact factor: 0.69).

Publications in 2014 (8 total)

Bi S.*, **Atamturktur S.** and Deng Z. (2014), “Stochastic Model Updating Using Distance Discrimination Analysis,” *Chinese Journal of Aeronautics (Elsevier)*, Vol. 27, No. 5, pp. 1188-1198, (Impact factor: 1.07).

Li T.* and **Atamturktur S.** (2014), “Fidelity and Robustness of Detailed Micromodeling, Simplified Micromodeling and Macromodeling Techniques for a Masonry Dome,” *Journal of Performance of Constructed Facilities (ASCE)*, Vol. 28, No. 3, pp. 480-490 (Impact factor: 0.63).

Wang L.*, Juang C.H., **Atamturktur S.**, Gong W.*, Khoshnevisan S.* and Hsieh H. S. (2014), “Optimization of Design of Supported Excavations in Multi-layer Strata,” *Journal of GeoEngineering (TGS)*, Vol. 9, No. 1, pp. 35-44.

Liu Z.*, **Atamturktur S.** and Juang C. H. (2014), “Reliability based Multi-objective Robust Design Optimization of Steel Moment Resisting Frame Considering Spatial Variability of Connection Parameters,” *Engineering Structures (Elsevier)*, Vol. 76, pp. 393-403, (Impact factor: 1.77).

Juang C.H., Wang L.*, Hsieh H. S. and **Atamturktur S.** (2014), “Robust Geotechnical Design of Braced Excavations in Clays,” *Structural Safety (Elsevier)*, Vol. 49, pp. 37-44 (Impact factor: 1.68).

Prabhu S.*, **Atamturktur S.**, Brosnan D., Dorrance R. and Messier P. (2014), “Foundation Settlement Analysis of Fort Sumter National Monument: Model Development and Predictive Assessment,” *Engineering Structures (Elsevier)*, Vol. 65, pp. 1-12, (Impact factor: 1.77).

Farajpour I.* and **Atamturktur S.** (2014), “Partitioned Analysis of Coupled Numerical Models Considering Imprecise Parameters and Inexact Models,” *Journal of Computing in Civil Engineering (ASCE)*, Vol. 28, No. 1, pp., 145–155, (Impact factor: 1.39).

Van Buren K.*, **Atamturktur S.** and Hemez F. (2014), “Model Selection through Robustness and Fidelity Criteria: Modeling the Dynamics of the CX-100 Wind Turbine Blade,” *Journal of Mechanical Systems and Signal Processing (Elsevier)*, Vol. 43, No. 1-2, pp. 246-259, (**Impact factor: 2.77**).

Publications in 2013 (18 total)

Prabhu S.* and **Atamturktur S.** (2013), “Selection of Optimal Sensor Locations Based on Modified Effective Independence Method: Case Study on a Gothic Revival Cathedral,” *Journal of Architectural Engineering (ASCE)*, Vol. 19, No. 4, pp. 288-301, (Impact factor: 0.44).

Hegenderfer J.* and **Atamturktur S.** (2013), “Prioritization of Code Development Efforts in Partitioned Analysis,” *Computer Aided Civil and Infrastructure Engineering (Wiley)*, Vol. 28, No. 4, pp. 289- 306, (Impact factor: 5.29).

Dalton S.*, **Atamturktur S.**, Farajpour I.* and Juang C.H. (2013), “An Optimization Based Approach for Structural Design Considering Safety, Robustness, and Cost,” *Journal of Engineering Structures (Elsevier)*. Vol 57, pp. 356-363, (Impact factor: 1.77).

Liu Z.*, Juang H. and **Atamturktur S.** (2013), “Confidence Level-Based Robust Design of Cantilever Retaining Walls in Sand,” *Computers and Geotechnics (Elsevier)*, Vol. 52, pp. 16- 27, (Impact factor: 1.57).

Wang L.*, Hwang J.H., Juang C.H. and **Atamturktur S.** (2013), “Reliability-Based Design of Rock Slopes – A New Perspective on Design Robustness,” *Engineering Geology (Elsevier)*, Vol. 154, pp. 56-63, (Impact factor: 1.24).

Luo Z.*, **Atamturktur S.** and Juang C.H. (2013), “Bootstrapping for Characterizing the Effect of Uncertainty in Sample Statistics for Braced Excavations,” *Journal of Geotechnical and Geoenvironmental Engineering (ASCE)*, Vol. 139, No. 1, pp. 13- 23, (**Impact factor: 1.47**).

Liu Z.*, **Atamturktur S.** and Juang H. (2013), “Performance Based Robust Design Optimization of Steel Moment Resisting Frames,” *Journal of Constructional Steel Research (Elsevier)*, Vol. 89, pp. 165-174, (Impact factor: 1.57).

Fisher M.*, Khan A. and **Atamturktur S.** (2013), "State of the Art in Scour Monitoring," *Sediment Transport: Monitoring, Modeling and Management*, Editors: Khan, A. A., and Wu, W., Nova Science Publishers, Inc. (book chapter).

Prabhu S.* and **Atamturktur S.** (2013), “Feature Assimilation for Vibration Based Damage Detection,” *Journal of Nondestructive Testing and Evaluation (ASTM)*, Vol. 41, No. 1, pp. 39-49. (**Impact factor: 0.57**).

Fisher M.*, **Atamturktur S.** and Khan A. (2013), “A Novel Vibration-Based Monitoring Technique for Bridge Pier and Abutment Scour,” *Journal of Structural Health Monitoring (Sage)*, Vol. 12, No. 2, pp. 114-125, (Impact factor: 3.21).

Fisher M.*, Chowdhury Md. N.*, Khan A. and **Atamturktur S.** (2013), “An Evaluation of Scour Measurement Devices,” *Flow Measurement and Instrumentation (Elsevier)*, Vol. 33, pp. 55-67, (Impact factor: 1.03).

Fisher M.*, Khan A. and **Atamturktur S.** (2013), “Scour Monitoring via Turbulent Open Channel Flow,” *Measurement Science and Technology (IOP Science)*, Vol. 24, No. 8, pp. 1-14, (Impact factor: 1.43).

Dalton S.*, **Atamturktur S.** and Juang C.H. (2013), “Structural Health Monitoring for Sustainable and Resilient Infrastructure Management,” *International Journal of Building, Urban, Interior and Landscape Technology*, Vol. 2, pp. 56-67.

Atamturktur S., Gilligan C.* and Salyards K. (2013), “Detection of Internal Defects in Concrete Members Using Global Vibration Characteristics,” *Materials Journal (ACI)*, Vol. 110, No. 5, pp. 529-538, (Impact factor: 2.73).

Juang C.H., Liu Z.* and **Atamturktur S.** (2013), “Reliability-based Robust Geotechnical Design of Retaining Walls,” *Sound Geotechnical Research to Practice, ASCE Geotechnical Special Publication (ASCE)*, pp. 514-524.

Atamturktur S., Williams B., Egeberg M.* and Unal C. (2013), “Batch Sequential Design of Optimal Experiments for Improved Predictive Maturity in Physics-Based Modeling,” *Structural and Multidisciplinary Optimization (Springer)*, Vol. 48, No. 3, pp. 549-569, (Impact factor: 2.21).

Farajpour I.* and **Atamturktur S.** (2013), “Error and Uncertainty Analysis of Inexact and Imprecise Computer Models,” *Journal of Computing in Civil Engineering (ASCE)*, Vol. 27, No. 4, pp. 407-418, (Impact factor: 1.39).

Atamturktur S. and Prabhu S.* (2013), “Simulation Based Structural Analysis of Fort Sumter considering Foundation Settlement,” *Structures Magazine, May*, pp. 26- 29 (short article).

Publications in 2012 (14 total)

Mollineaux M.**, Van Buren K.*, Hemez F. and **Atamturktur S.** (2012), “Simulating the Dynamics of Wind Turbine Blades: Part I, Model Development and Verification,” *Wind Energy (Wiley)*, Vol. 16, No. 5, pp. 694-710, doi: 10.1002/we.1519, (Impact factor: 2.89)

Van Buren K.*, Mollineaux M.**, Hemez F. and **Atamturktur S.** (2012), “Simulating the Dynamics of Wind Turbine Blades: Part II, Model Validation & Uncertainty Quantification,” *Wind Energy (Wiley)*, Vol. 16, No. 5, pp. 741-758, doi: 10.1002/we.1522, (Impact factor: 2.89).

Juang H., Wang L.*, **Atamturktur S.** and Luo Z. (2012), “Reliability-Based Robust and Optimal Design of Shallow Foundations in Cohesionless Soil in the Face of Uncertainty,” *Journal of GeoEngineering (TGS)*, Vol. 7, No. 3, pp. 75-87.

Juang C.H., Luo Z.*, **Atamturktur S.** and Huang H. (2012), “Bayesian Updating of Soil Parameters in Braced Excavations Using Field Observations,” *Journal of Geotechnical and Geoenvironmental Engineering (ASCE)*, Vol. 139, No. 3, pp. 395-406, (Impact factor: 1.47).

Atamturktur S., Li T.*, Ramage M. and Farajpour I.* (2012), “Load Carrying Capacity Assessment of a Scaled Masonry Dome: Simulations Validated with Non-Destructive and Destructive Measurements,” *Construction and Building Materials (Elsevier)*, Vol. 34, pp. 418-429, (Impact factor: 2.30).

Atamturktur S. and Sevim B. (2012), “Seismic Performance Assessment of Masonry Tile Domes through Non-linear Finite Element Analysis,” *Journal of Performance of Constructed (ASCE)*, Vol. 26, No. 4, pp. 410-423, (Impact factor: 0.59).

Luo Z.*, **Atamturktur S.** and Juang C.H. (2012), “Effect of Spatial Variability on Probability-Based Design of Excavations against Basal-Heave,” *Geotechnical Special Publication (ASCE)*, No. 225, pp. 2876-2884.

Luo Z.*, **Atamturktur S.**, Cai Y. and Juang C. H. (2012), "Simplified Random-Field Framework for Reliability-Based Design Against Basal-Heave Failure in A Braced Excavation in Clay," *Journal of Geotechnical and Geoenvironmental Engineering (ASCE)*, Vol. 138, No.4, pp. 441-450 (Impact factor: 1.47).

Luo Z.*, **Atamturktur S.**, Cai Y. and Juang C. H. (2012), "Reliability Analysis of Basal-heave in a Braced Excavation in a 2-D Random Field," *Computers and Geotechnics (Elsevier)*, Vol. 39, pp. 27-37, (Impact factor: 1.57).

Farajpour I.* and **Atamturktur S.** (2012), "Optimization-based Strong Coupling Procedure for Partitioned Analysis," *Journal of Computing in Civil Engineering (ASCE)*, Vol. 26, No. 5, pp. 648-660, (Impact factor: 1.39).

Van Buren K.* and **Atamturktur S.** (2012), "A Comparative Study: Predictive Modeling of Wind Turbine Blades," *Journal of Wind Engineering (Multi-science)*, Vol. 36, No. 3, pp. 235-250, (Impact factor: 2.57).

Atamturktur S., Hemez F. and Laman J. (2012), "Verification and Validation Applied to Finite Element Models of Historic Masonry Monuments," *Engineering Structures (Elsevier)*, Vol. 43, pp. 221-234, (Impact factor: 1.77).

Atamturktur S. and Laman J. (2012), "Finite Element Model Correlation and Calibration of Historic Masonry Monuments: Review," *Journal of Structural Design of Tall and Special Buildings (Wiley)*, Vol. 21, No. 2, pp. 96-113 (Impact factor: 0.90).

Atamturktur S., Hemez F. and Laman J. (2012), "Uncertainty Quantification in Model Verification and Validation as Applied to Large Scale Historic Masonry Monuments," *Engineering Structures (Elsevier)*, Vol. 43, pp. 221-234, (Impact factor: 1.77).

Publications in 2011 (7 total)

Atamturktur S., Hemez F., Williams B., Tome C. and Unal C. (2011), "A Forecasting Metric for Predictive Modeling," *Computers and Structures (Elsevier)*, Vol. 89, No. 23- 24, pp. 2377-2387, (Impact factor: 3.24).

Hemez F. and **Atamturktur S.** (2011), "The Dangers of Sparse Sampling for the Quantification of Margin and Uncertainty," *Reliability Engineering and System Safety (Elsevier)*, Vol. 96, pp. 1220-1231, (Impact factor: 2.05).

Unal C., Williams B., Hemez F., **Atamturktur S.** and McClurea P. (2011), "Improved Best Estimate Plus Uncertainty Methodology, Including Advanced Validation Concepts to License Evolving Nuclear Reactors," *Nuclear Engineering and Design (Elsevier)*, No. 241, pp. 1813-1833, (Impact factor: 0.97).

Atamturktur S., Bornn L. and Hemez F. (2011), "Vibration Characteristics of Vaulted Masonry Monuments Undergoing Differential Support Settlement," *Engineering Structures (Elsevier)*, Vol. 33, pp. 2472-2484, (Impact factor: 1.77).

Sevim B., Bayraktar A., Altunışık A.C., **Atamturktur S.** and Birinci F. (2011), "Finite Element Model Calibration Effects on the Earthquake Response of Masonry Arch Bridges," *Finite Elements in Analysis and Design (Elsevier)*, Vol. 47, No. 7, pp. 621-634, (Impact factor: 2.02).

Luo Z.*, **Atamturktur S.**, Juang C.H. and Lin P.S. (2011), "Probability of Serviceability Failure in a Braced Excavation in a Spatially Random Field: Fuzzy Finite Element Approach," *Computers and Geotechnics (Elsevier)*, Vol. 38, No. 8, pp. 1031-1040, (Impact factor: 1.57).

Sevim B., Bayraktar A., Altunişik A. C., **Atamturktur** S. and Birinci F. (2011), “Assessment of Nonlinear Seismic Performance of a Restored Historical Arch Bridge Using Ambient Vibrations,” *Nonlinear Dynamics (Springer)*, Vol. 63, No. 4, pp. 755-770, (Impact factor: 3.0).

Publications in 2010 (3 total)

Atamturktur S. and Boothby T. (2010), “Stochastic Bayesian Calibration of Finite Element Models of Masonry Vaults,” *The Masonry Society Journal (TMS)*, Vol. 28, No. 2, pp. 77-93, (Impact factor: 2.0).

Hemez F., **Atamturktur** S. and Unal C. (2010), “Predictive Maturity of Validated Numerical Models,” *Computers and Structures (Elsevier)*, Vol. 88, pp. 497- 505, (Impact factor: 3.24).

Atamturktur S., Fanning P. and Boothby T. (2010), “Traditional and Operational Modal Testing of Masonry Vaults,” *Engineering and Computational Mechanics (ICE)*, Vol. 163, No. 3, pp. 213-223, (Impact factor: 0.41).

Publications prior to joining Clemson (2 total)

Atamturktur S., Pavic A., Reynolds P. and Boothby T. (2009), “Full-Scale Modal Testing of Vaulted Gothic Churches: Lessons Learned,” *Journal of Experimental Techniques (Wiley)*, Vol. 33, No. 4, pp. 65-74, (Impact factor: 0.55).

Atamturktur S. and Boothby T. (2007), “The Development of Finite Element Models and the Horizontal Thrust of Guastavino Domes,” *The Association for Preservation Technology International (APTI)*, Vol. 38, No. 4, pp. 21-29.

Conference Proceedings (Full Paper Peer-Reviewed)

10 proceedings printed

** indicates publications with Atamturktur’s students.*

Atamturktur S. and Brown A. (2015), “State-Aware Calibration for Inferring Systematic Bias in Computer Models of Complex Systems,” NAFEMS World Congress, June 21-25, Manchester Grand Hyatt, San Diego Market Place, San Diego, California, USA, ISBN 978-1-910643-24-2.

Stevens G.* and **Atamturktur** S. (2015), “Experimental Validation and Uncertainty Quantification of Partitioned Models,” NAFEMS World Congress, June 21-25, Manchester Grand Hyatt, San Diego Market Place, San Diego, California, USA, ISBN 978-1-910643-24-2.

Atamturktur S., Prabhu S.* and Roche G.* (2014), “Predictive Modeling of Large Scale Historic Masonry Monuments: Uncertainty Quantification and Model Validation,” *EURODYN IX International Conference on Structural Dynamics*, June 30-July 2, Porto, Portugal.

Atamturktur S. and Stevens G.* (2014), “Uncertainty Inference for Inexact Coupled Numerical Models in Partitioned Analysis,” *EURODYN IX International Conference on Structural Dynamics*, June 30-July 2, Porto, Portugal.

Juang C.H., Wang L.* and **Atamturktur** S., “Keynote: Robust design of geotechnical systems – A new design perspective,” Proceedings of the 4th International Symposium of Geotechnical Safety and Reliability (ISGSR), Hong Kong, December 5-7, 2013. Zhang et al. (eds.), Taylor & Francis Group, London, ISBN 978-1-138-00163-3, pp. 69-78.

Juang C.H., Wang L.*, Khoshnevisan K.** and **Atamturktur** S., “Keynote: Robust Geotechnical Design – Methodology and Applications,” Proceedings of the 15th Conference on Current Researches in

Geotechnical Engineering in Taiwan, Yunlin; Geotechnical Award Lecture, Taiwan Geotechnical Society, September 11-13, 2013.

Prabhu S.* and **Atamturktur S.** (2011), “Feature Assimilation in Structural Health Monitoring of Masonry Construction,” *Proceedings of 11th North American Masonry Conference*, Minneapolis, Minnesota, USA.

Atamturktur S. (2009), “Validation of Nonlinear Finite Element Models with Dynamic Tests: an Overview,” *The Proceedings of College of Engineering Research Symposium*, University Park, Pennsylvania, USA.

Boothby T., **Atamturktur S.**, Ochsendorf J., Tallon A. and Murray S. (2007), “Structural Modeling of the Vaults of St. Julien in Coulevre, France,” *Proceedings of 10th North American Masonry Conference*, St. Louis, Missouri, USA.

Boothby T., **Atamturktur S.** (2007), “A Guide for the Finite Element Analysis of Historic Load Bearing Masonry Structures,” *Proceedings of 10th North American Masonry Conference*, St. Louis, Missouri, USA.

Conference Proceedings (Abstract Peer-Reviewed)

29 proceedings printed

** indicates publications with Atamturktur’s students.*

Roche G.*, Prabhu S.*, **Atamturktur S.** (2015), “Model Validation in Scientific Computing: Considering Robustness to Non-Probabilistic Uncertainty in the Input Parameters,” IMAC XXXIII A Conference and Exposition on Structural Dynamics, February 2-5, Rosen Plaza Hotel, Orlando, FL, USA.

Atamturktur S. and Khan A. (2015), “Vibration-Based Scour Monitoring: Prototype Design, Laboratory Experiments and Field Deployment,” IMAC XXXIII A Conference and Exposition on Structural Dynamics, February 2-5, Rosen Plaza Hotel, Orlando, FL, USA.

Atamturktur S., Stevens G.* and Cheng, Y.* (2015), “Clustered Parameters of Calibrated Models when Considering Both Fidelity and Robustness,” IMAC XXXIII A Conference and Exposition on Structural Dynamics, February 2-5, Rosen Plaza Hotel, Orlando, FL, USA.

Atamturktur S. and Stevens G.* (2014) “Validation of Strongly Coupled Models: A Framework for Resource Allocation” IMAC XXXII A Conference and Exposition on Structural Dynamics, February 3-6, 2014, Rosen Plaza Hotel, Orlando, FL, USA.

Stevens G.*, **Atamturktur S.**, Lebensohn R. and Kaschner G. (2014), “Experiment-based Validation and Uncertainty Quantification of Multi-scale Plasticity Models” IMAC XXXII A Conference and Exposition on Structural Dynamics, February 3-6, 2014, Rosen Plaza Hotel, Orlando, FL, USA.

Stevens G.*, **Atamturktur S.** and Hegenderfer J.* (2014), “Improving Model Predictions Through Partitioned Analysis” IMAC XXXII A Conference and Exposition on Structural Dynamics, February 3-6, 2014, Rosen Plaza Hotel, Orlando, FL, USA. Farajpour, I.,

Atamturktur S. (2014), “Role of Numerical Errors in the Strongly Coupled Models.” *IMAC XXXII A Conference and Exposition on Structural Dynamics*, February 3-6, 2014, Rosen Plaza Hotel, Orlando, Florida, USA.

Yazdekhosti S.*, Piratla K. R., Khan A. and **Atamturktur S.** (2014), “Analysis of Factors Influencing the Selection of Water Main Rehabilitation Methods”, *NASTT No Dig 2014, Orlando, FL*.

Atamturktur S., Prabhu S.* and Dorrance R. (2013), “Structural Assessment of Fort Sumter Masonry Coastal Fortification Subject to Foundation Settlements,” *Proceedings of 31st Society of Experimental Mechanics (SEM) International Modal Analysis Conference (IMAC-XXVIII)*, Orange County, California, USA.

Farajpour I.* and **Atamturktur S.** (2013), "Ranking Constituents of Coupled Models for Improved Performance," *Proceedings of 31st Society of Experimental Mechanics (SEM) International Modal Analysis Conference (IMAC-XXVIII)*, Orange County, California, USA.

Liu Z.*, **Atamturktur S.** and Hsein J. (2013), "Robust Design Optimization of Steel Moment Resisting Frame under Ground Motion Uncertainty," *Proceedings of 31st Society of Experimental Mechanics (SEM) International Modal Analysis Conference (IMAC-XXVIII)*, Orange County, California, USA.

Van Buren K.*, **Atamturktur S.** and Hemez F. (2013), "Simulating the Dynamics of the CX-100 Wind Turbine Blade: Model Selection Using a Robustness Criterion," *Proceedings of 31st Society of Experimental Mechanics (SEM) International Modal Analysis Conference (IMAC-XXVIII)*, Orange County, California, USA.

Egeberg M.*, **Atamturktur S.** and Hemez F. (2013), "Defining Coverage of a Domain Using a Modified Nearest-Neighbor Metric," *Proceedings of 31st Society of Experimental Mechanics (SEM) International Modal Analysis Conference (IMAC-XXVIII)*, Orange County, California, USA.

Hegenderfer J.*, Gillen A.* and **Atamturktur S.** (2012), "Damage Detection in Steel Structures Using Bayesian Calibration Techniques," *Proceedings of 30th Society of Experimental Mechanics (SEM) International Modal Analysis Conference (IMAC-XXVIII)*, Jacksonville, Florida, USA.

Van Buren K.*, Hemez F. and **Atamturktur S.** (2012), "Demonstrating Predictive Capability of Validated Wind Turbine Blade Models," *Proceedings of 30th Society of Experimental Mechanics (SEM) International Modal Analysis Conference (IMAC-XXVIII)*, Jacksonville, Florida, USA.

Dalton S.*, Farajpour I.*, Juang H. and **Atamturktur S.** (2012), "Robust Design Optimization to Account for Uncertainty in the Structural Design Process," *Proceedings of 30th Society of Experimental Mechanics (SEM) International Modal Analysis Conference (IMAC-XXVIII)*, Jacksonville, Florida, USA.

Van Buren K.* and **Atamturktur S.** (2011), "Model form Error of Alternative Modeling Strategies: Shell Type Wind Turbine Blades," *Proceedings of 29th Society of Experimental Mechanics (SEM) International Modal Analysis Conference (IMAC-XXVII)*, Jacksonville, Florida, USA.

Prabhu S.*, Supler J.* and **Atamturktur S.** (2011), "Feature Assimilation in Structural Health Monitoring Applications," *Proceedings of 29th Society of Experimental Mechanics (SEM) International Modal Analysis Conference (IMAC-XXVII)*, Jacksonville, Florida, USA.

Atamturktur S., Hemez F. and Unal. C. (2011), "A Forecasting Metric for Predictive Modeling," *Proceedings of 29th Society of Experimental Mechanics (SEM) International Modal Analysis Conference (IMAC-XXVII)*, Jacksonville, Florida, USA.

Hemez F. and **Atamturktur S.** (2010), "Dangers of Sparse Sampling," *Proceedings of 28th Society of Experimental Mechanics (SEM) International Modal Analysis Conference (IMAC-XXVII)*, Jacksonville, Florida, USA.

Atamturktur S. (2010), "Defect Detection in Concrete Members," *Proceedings of 28th Society of Experimental Mechanics (SEM) International Modal Analysis Conference (IMAC-XXVII)*, Jacksonville, Florida, USA.

Hemez F., **Atamturktur S.** and Unal C. (2010), "Demonstrating the Improvement of Predictive Maturity of a Computational Model," AIAA Non-Deterministic Approaches Conference, Orlando, Florida, USA.

Atamturktur S. (2009), "Validation and Verification under Uncertainty applied to Finite Element Models of Historic Masonry Monuments," *Proceedings of 27th Society of Experimental Mechanics (SEM) International Modal Analysis Conference (IMAC-XXVII)*, Orlando, Florida, USA.

Atamturktur S., Hemez F., Williams B. and Unal C. (2009), "A discussion on Predictive Maturity using Multivariate and Functional Output," *Proceedings of 27th Society of Experimental Mechanics (SEM) International Modal Analysis Conference (IMAC-XXVII)*, Orlando, Florida, USA.

Hemez F., **Atamturktur S.** and Unal C. (2009), "Defining Predictive Maturity for Validated Numerical Simulations," *Proceedings of 27th Society of Experimental Mechanics (SEM) International Modal Analysis Conference (IMAC-XXVII)*, Orlando, Florida, USA.

Atamturktur S., Pavic A. and Reynolds P. (2008), "Sensitivity of Modal Parameters of Historic Monuments to Geometric Distortion," *Proceedings of 26th Society of Experimental Mechanics (SEM) International Modal Analysis Conference (IMAC-XXVI)*, Orlando, Florida, USA.

Atamturktur S., Fanning P. and Boothby T. (2007), "Traditional and Operational Modal Testing of the Washington National Cathedral," *Proceedings of the International Operational Modal Analysis Conference*, Copenhagen, Denmark.

Atamturktur S., Hanagan L. and Boothby T. (2007), "Extension of Large Scale Modal Analysis Techniques to Historic Masonry Vaults," *Proceedings of 25th Society of Experimental Mechanics (SEM) International Modal Analysis Conference (IMAC-XXV)*, Orlando, Florida, USA.

Boothby T., **Atamturktur S.** and Hanagan L. (2006), "Modal Analysis Methods for Validation of Vaulted Stone Masonry Models," *Proceedings of 2006 Architectural Engineering Conference*, Omaha, Nebraska, USA.

Long Abstracts

6 long abstracts accepted

** indicates publications with Atamturktur's students*

*** indicates other graduate students*

Atamturktur S., Stevens G.N.*, Brown A., Williams B., Unal C., Lebensohn R. and Kaschner G. (2016), "State Aware Calibration of Computer Models," American Society of Mechanical Engineers (ASME) Verification and Validation Symposium, Las Vegas, Nevada, USA.

Stevens G.N.*, **Atamturktur S.**, Lebensohn R. and Kaschner G. (2014), "Bias-Corrected Partitioned Analysis of Multi-scale Plasticity Models," American Society of Mechanical Engineers (ASME) Verification and Validation Symposium, Las Vegas, Nevada, USA.

Atamturktur S., Stevens G.N.* and Roche G.M.* (2014), "Framework for Experiment-Based Verification and Validation of Strongly Coupled Numerical Models," American Society of Mechanical Engineers (ASME) Verification and Validation Symposium, Las Vegas, Nevada, USA.

Stevens G., **Atamturktur S.**, Lebensohn R. and Kaschner, G. (2013), "Experiment-based Validation and Uncertainty Quantification of Multi-scale Plasticity Models," ANS Winter Meeting, November 10-14, Omni Shoreham Hotel, Washington, D.C., USA.

Van Buren K.L.*, Mollineaux M.G.**, Hemez F.M. and **Atamturktur S.** (2012), "Simulating the Dynamics of the CX-100 Wind Turbine Blade: Part I, Model Development, Verification and Validation," *American Society of Mechanical Engineers (ASME) Verification and Validation Symposium*, Las Vegas, Nevada, USA.

Van Buren K.L.*, Hemez F.M. and **Atamturktur S.** (2012), "Simulating the Dynamics of the CX-100 Wind Turbine Blade: Part II, Model Selection Using a Robustness Criterion," *American Society of Mechanical Engineers (ASME) Verification and Validation Symposium*, Las Vegas, Nevada, USA.

Research Reports

16 reports submitted

** indicates publications with Atamturktur's students*

*** indicates other graduate students*

Atamturktur S. and Prabhu S.* (2014), "Structural Analysis of Fort Sumter," Report prepared for the US Department of the Interior, National Park Service.

Kyser D.**, Prabhu S.*, Nadarajah R., Messier P. and **Atamturktur S.** (2014), "Hydrographic Survey, Wave Load Analysis and Foundation Analysis of Fort Sumter," Report prepared for the US Department of the Interior, National Park Service.

Atamturktur S., Dutta M.* and Prabhu S.* (2013), "Wave Forces Acting on Foundation of Fort Sumter," Report prepared for the US Department of the Interior, National Park Service.

Atamturktur S. and Prabhu S* (2013), "The Structural Assessment of Subterranean Cisterns," Report prepared for the US Department of the Interior, National Park Service.

Atamturktur S. and Prabhu S.* (2014), "Structural Analysis of Fort Sumter," Report prepared for the US Department of the Interior, National Park Service.

Mollineaux M.**, Van Buren K.*, Hemez F. and **Atamturktur S.** (2011), "Simulating the Dynamics of Wind Turbine Blades: Part I, Model Development and Verification," Los Alamos Technical Report, LA-UR-11-4996.

Van Buren K.*, Mollineaux M.**, Hemez F. and **Atamturktur S.** (2011), "Simulating the Dynamics of Wind Turbine Blades: Part II, Model Validation & Uncertainty Quantification," Los Alamos Technical Report, LA-UR-11-4997.

Atamturktur S., Hemez F.M. and Unal C. (2010), "Calibration Under Uncertainty for Finite Element Models of Masonry," Los Alamos Technical Report, LA-14414.

Atamturktur S., Hemez F.M., Tomé C., Williams B. and Unal C. (2010), "A Forecasting Metric for Predictive Modeling in Science and Engineering," Los Alamos Technical Report, LA-UR-10-03699

Atamturktur S., Lebensohn R., Tomé C., Higdon D., Williams B., Hemez F.M. and Unal C. (2009), "Predictive Maturity: A Quantitative Metric to Optimize Complex Simulations via Systematic Experimental Validation," Los Alamos Technical Report, LA-UR-09-07226.

Hemez F. and **Atamturktur S.** (2009), "The Dangers of Sparse Sampling for Uncertainty Propagation and Model Calibration," Los Alamos Technical Report, LA-UR-09-03917.

Hemez F. and **Atamturktur S.** (2009), "Prediction with Quantified Uncertainty of Temperature and Rate Dependent Material Behavior," Los Alamos Technical Report, LA-UR-08-6741.

Atamturktur S., Hemez F., Williams B. and Unal C. (2008), "Predictive Maturity using Multivariate and Functional Output," Los Alamos Technical Report, LA-UR-08-07313.

Hemez F., **Atamturktur S.** and Unal C. (2008), "Defining Predictive Maturity for Validated Numerical Simulations," Los Alamos Technical Report, LA-UR-08-06741.

Boothby T., **Atamturktur S.** and Erdogmus E. (2006), "Manual for the Assessment of Load Bearing Unreinforced Masonry Structures," prepared for the US Department of the Interior, National Park Service, National Center for Preservation Technology and Training.

Boothby T., Parfitt K. and **Atamturktur S.** (2005), "Condition Review and Investigation of Moisture Intrusion of the Exterior Bastion Walls at Historic Ft. Pitt Museum," prepared for The Pennsylvania Historic and Museum Commission.

INVITED PRESENTATIONS

International Experiences

8 invited international trips fully funded by the host institution

“Experiment-based Validation and Uncertainty Quantification of Partitioned Models: Improving Predictive Capability of Multi-scale Plasticity Models,” Bauhaus-Universität Weimar, Institut für Strukturmechanik, Weimar, **Germany**, (September, 2016) (invited, funded by the host).

“Model Calibration under Uncertainty,” Bauhaus-Universität Weimar, Institut für Strukturmechanik, Weimar, **Germany**, (November, 2015) (invited, funded by the host).

“State-aware Calibration of Computer Models of Engineering Systems,” Scientific Advisory Board Member, International Conference on Uncertainty in Mechanical Engineering (ICUME), Darmstadt, **Germany**, (November, 2015) (invited, Keynote Speech, funded by the host).

“Experiment-based Validation of Computer Models: Historic Masonry Monuments,” Workshop on Seismic Risk of Historical Structures, Istanbul Technical University, Istanbul, **Turkey**, (November 2014) (invited, funded by the host).

“Considering Fidelity and Robustness in Engineering Analysis and Design: A Multi-objective Optimization-based Approach,” Workshop on Model-based Design, Validation, and Monitoring of Structures under Severe Uncertainty, Universite De Franche-Comte, Besancon, **France**, (June 2014), (invited, funded by the host).

“Multi-objective Model Calibration of Complex Numerical Models Considering Fidelity and Robustness,” Workshop on Model-based Design, Validation, and Monitoring of Structures under Severe Uncertainty, Universite De Franche-Comte, Besancon, **France**, (June 2014), (invited, funded by the host).

“Validation and Uncertainty Quantification of Simulation Models of Masonry Systems,” École polytechnique fédérale de Lausanne, Lausanne, **Switzerland**, (July 2013) (invited, funded by the host).

Three different short-courses on “Error and Uncertainty Analysis of Inexact and Imprecise Computer Models,” Universite De Franche-Comte, Besancon, **France**, (June-August 2013), (invited, funded by the host).

A Sample of National Experiences

“Verification, Validation and Uncertainty Quantification of Simulation Models,” The Cyberinfrastructure Expo, Clemson, SC (September 2014) (invited, Keynote Speech).

“Integrated Numerical and Experimental Study: Structural Behavior of Dry-Stacked Systems,” CCMA Summer Meeting, Charleston, SC, (July 2014) (invited).

“Verification, Validation and Uncertainty Quantification of Simulation Models,” Midas Technical Webinar, (March 2012) (invited).

“Prediction, Calibration, and Validation Concepts through Statistical Inference,” Department of Civil and Environmental Engineering, University of South Carolina, (October 2010) (invited).

“Predictive Maturity: A Quantitative Metric for Optimizing Complex Simulations via Systematic Experimental Validation,” Los Alamos National Laboratory IS&T Symposium, Los Alamos National Laboratory, Los Alamos, NM (August 2009) (invited).

“Predictive Maturity of Computer Models using Functional and Multivariate Output”, Los Alamos National Laboratory Symposium, Los Alamos National Laboratory, Los Alamos, NM (August 2008) (invited).

HONORS AND AWARDS

Professional Awards

Outstanding Woman Faculty Award, Clemson University President’s Commission on Women, 2016

Murray Stokely Award for Excellence in Teaching, College of Engineering and Science, Clemson University, 2014

Outstanding Teacher Award, Clemson University Chapter of Chi Epsilon Honors Society, 2012

Outstanding Teacher Award, Clemson University Chapter of Chi Epsilon Honors Society, 2011

LAAP Outstanding Contribution Award, Los Alamos National Laboratory, 2009

Pennsylvania Concrete Masonry Association Sponsorship & Northeast Cement Shippers Association Sponsorship, University Professor's Masonry Workshop, 2008

Women in Engineering Program, Travel grants to participate at 24th and 26th International Modal Analysis Conference, 2006 and 2008

James L. Noland Student Fellowship Award, 10th North American Masonry Conference, 2007

Dominick J. Demichele Scholarship Award, 25th International Modal Analyses Conference, 2007

World University Network Fellowship Award, Visiting Researcher at University of Sheffield, UK, 2007

Best Paper Nominations and Awards

Nominated for the Best Paper Award, Model Validation and Uncertainty Quantification Technical Group, 30th International Modal Analysis Conference, 2016

Best Paper Award, Model Validation and Uncertainty Quantification Technical Group, 29th International Modal Analysis Conference, 2015

Nominated for the Best Paper Award, Model Validation and Uncertainty Quantification Technical Group, 28th International Modal Analysis Conference, 2014

Nominated for the Best Paper Award, Model Validation and Uncertainty Quantification Technical Group, the paper titled “Defining Coverage of a Domain Using a Modified Nearest-Neighbor Metric,” 28th International Modal Analysis Conference, 2013

Nominated for the ASCE Middlebrooks/Croes/Norman Award, the paper titled “Bayesian Updating of Soil Parameters for Braced Excavations Using Field Observations,” Journal of Geotechnical and Geoenvironmental Engineering, 2013

Most Outstanding Paper Award, Taiwan Geotechnical Society, 2012

Nominated for the ASCE Middlebrooks/Croes/Norman Award, the paper titled “Simplified approach for reliability-based design against basal-heave failure in braced excavations considering spatial effects,” Journal of Geotechnical and Geoenvironmental Engineering, 2012

Best Paper Award, Model Validation and Uncertainty Quantification Technical Group, 28th International Modal Analysis Conference, 2010

Best Paper Award, College of Engineering Research Symposium, Pennsylvania State University, 2009

SPONSORED RESEARCH

Active Projects

National Science Foundation (NSF), Broadening Participation in Engineering, \$49,711; (2017-2018), “Broadening Participation in Engineering: Workshop on Reducing Attrition in Precalculus Pathways,” (PI: Gallagher, **Co-PI Atamturktur**, Frady, Acker).

National Science Foundation (NSF), Professional Formation of Engineers: Revolutionizing Engineering Departments (IUSE/PFE:RED), \$1,999,289; (2017- 2022), “Clemson University: Learning Teams and Innovation Ventures for Adaptable Training in Engineering (CULTIVATE),” (**Co-PI and lead author: Atamturktur**, Co-PI: Sarasua, Marion, Martin and Benson).

National Science Foundation (NSF), National Research Traineeship, Data-Enabled Science and Engineering (NRT:DESE), \$2,989,899; (2016- 2021), “Preparing Resilient and Operationally Adaptive Communities through an Interdisciplinary, Venture-based Education (PROACTIVE),” (**PI: Atamturktur**, Co-PI: Bottum, Khan, Martin and Moysey).

National Science Foundation (NSF), Increasing the Participation and Advancement of Women in Academic Science and Engineering Careers (ADVANCE), \$3,405,472; (2016- 2021), “Transforming the Institution towards Gender Equity through Retention and Support,” (PI: Jones, **Clemson-PI & Director: Atamturktur**, Co-PI: Granberg, Rosopa, Winslow).

National Science Foundation (NSF), Design of Engineering Material Systems (DEMS), \$427,724; (2016- 2019), “Simulation-Based Design of Polymer Nanocomposites for Structural Applications,” (**PI: Atamturktur**, Co-PI: Kitchens and Brown).

Department of Education (DoEd), Graduate Assistance in Areas of National Need (GAANN), \$1,312,500; (2016- 2020), “Model Validation Analytics in Support of High-Consequence Decision Making in Civil and Environmental Engineering,” (**PI: Atamturktur**, Co-PI: N/A).

Department of the Interior (DoI), National Center for Preservation Technology and Training (NCPTT), \$40,000; (2016- 2017), “Foresight for Disaster Management: Infrastructure Risk Index Analysis,” (**PI: Atamturktur**).

American Insurance Group (AIG), \$137,171; (2016- 2017), “Framework for Downtime Loss Modeling for Industrial Facilities,” (**PI: Atamturktur**).

National Concrete Masonry Association (NCMA), \$136,966, (2015- 2017), “Appraising and Optimizing the Thermal and Structural Characteristics of Concrete Masonry Units: An Integrated Approach for Experimental Testing and Numerical Modeling,” (**PI: Atamturktur**, Co-PI: Sanders).

National Science Foundation (NSF), Cyber-Innovation for Sustainability Science and Engineering (CyberSEES), \$396,011; (2015- 2017), “Enabling Sustainable Water Supplies Through Self-Powered Sensor-Based Monitoring,” (PI: Piratla, **Co-PI: Atamturktur**, Khan, Sorber).

National Concrete Masonry Association (NCMA), \$104,000; (2014- 2016), “An Integrated Numerical and Experimental Study: Structural Behavior of Dry-Stacked Systems,” (**PI: Atamturktur**, Co-PI: N/A).

Successfully Completed Projects

National Science Foundation (NSF), \$394,666; (2012- 2016), “Transforming Robust Design Concept into a Novel Geotechnical Design Tool,” (PI: Juang, **Co-PI: Atamturktur**, Co-PI: N/A).

Vulcraft, South Carolina, \$24,205; (2013- 2015), “Debris Impact Resistance of Steel Roof Decks,” (**PI: Atamturktur**, Co-PI: Ross)

Department of Education (DoEd), Graduate Assistance in Areas of National Need (GAANN), \$1,112,500; (2012- 2016), “Graduate Training in Engineering and Managing Resilient and Sustainable Infrastructure,” (**PI: Atamturktur**).

Department of the Interior (DoI), National Park Services NPS), \$172,000; (2012- 2014), “Structural Integrity Assessments at Fort Sumter National Monument (FSNM): Phase II –CESU,” (**PI: Atamturktur**, Co-PI: N/A).

Department of the Interior (DoI), National Park Services NPS), \$270,000; (2011- 2014), “Structural Integrity Assessments at Fort Sumter National Monument (FSNM): Phase I –CESU,” (**PI: Atamturktur**, Co-PI: N/A).

South Carolina Department of Transportation (SC DOT), \$458,904; (2010- 2014), “Real Time Measurement of Scour Depths around Bridge Piers and abutments,” (PI: Khan, **Co-PI: Atamturktur**).

Department of Energy (DoE), Nuclear Energy University Programs (NEUP), \$614,690; (2010- 2014), “Predictive Maturity of Multi-Scale Simulation Models for Fuel Performance,” (**PI: Atamturktur**, Co-PI: N/A).

Department of the Interior (DoI), National Center for Preservation Technology and Training (NCPTT), \$50,000; (2011- 2013), “Structural Prognosis for The Effective Management of Nation’s Cultural Heritage,” (**PI: Atamturktur**, Co-PI: N/A).

4SE, \$6,000; (2010), “Effect of Member Failure on Structural Stability Applied to Fort Jefferson, FL.,” (**PI: Atamturktur**, Co-PI: N/A).

Los Alamos National Laboratory (LANL), \$78,757; (2010- 2011), “The Influence of Adding Physics on the Predictive Maturity of a Code,” (**PI: Atamturktur**, Co-PI: N/A).

Department of the Interior (DoI), National Center for Preservation Technology and Training (NCPTT), \$50,000; (2010- 2011), “Structural Health Monitoring of Nation’s Cultural Heritage,” (**PI: Atamturktur**, Co-PI: N/A).

OTHER SPONSORED ACTIVITY

Masonry Structural Design Competition for Civil Engineering Students, National Concrete Masonry Association (NCMA), \$13,000; (\$13,000), (2014- 2015), (**PI: Atamturktur**, Co-PI: N/A).

Structural Health Monitoring of Civil Infrastructure, Creative Inquiry Grant, Clemson University, \$3,000 (2014), (**PI: Atamturktur**, Co-PI: N/A).

REU: Transforming Robust Design Concept into a Novel Geotechnical Design Tool, National Science Foundation, \$12,000; (\$6,000), (2013- 2014), (PI: Juang, **Co-PI: Atamturktur**).

Masonry Structural Design Competition for Civil Engineering Students, National Concrete Masonry Association (NCMA), \$13,000; (\$13,000), (2013- 2014), (**PI: Atamturktur**, Co-PI: N/A).

Structural Health Monitoring of Civil Infrastructure, Creative Inquiry Grant, Clemson University, \$3,000 (2013), (**PI: Atamturktur**, Co-PI: N/A).

Structural Health Monitoring of Civil Infrastructure, Creative Inquiry Grant, Clemson University, \$2,100 (2012), (**PI: Atamturktur**, Co-PI: N/A).

Experiences in Undergraduate Research, Exploration and Knowledge Advancement (EUREKA!), \$700 (2011), (**PI: Atamturktur**, Co-PI: N/A).

Structural Health Monitoring of Civil Infrastructure, Creative Inquiry Grant, Clemson University, \$3,000 (2011), (**PI: Atamturktur**, Co-PI: N/A).

Experiences in Undergraduate Research, Exploration and Knowledge Advancement (EUREKA!), \$700 (2010), (**PI: Atamturktur**, Co-PI: N/A).

Structural Health Monitoring of Civil Infrastructure, Creative Inquiry Grant, Clemson University, \$1,500 (2010), (**PI: Atamturktur**, Co-PI: N/A).

GRADUATE STUDENT ADVISING

Postdoctoral Fellows as the Faculty Advisor

Saurabh Prabhu (Ph.D.), “Framework for Downtime Loss Modeling for Industrial Facilities” (2015-2017)

Karma Yonten (Ph.D.), “Prioritization of Code Development Efforts in Resource Allocation to Achieve Improved Predictive Maturity of Multi-Scale and Multi-Physics Modeling of Fuel Performance,” (2011-2012).

Murat Hamutcuoglu (Ph.D.), “Experiment Prioritization: Resource Allocation to Achieve Improved Predictive Maturity for Multi-Scale and Multi-Physics Modeling of Fuel Performance,” (2010-2011).

Doctoral Graduates as the Faculty Advisor

Sepideh Yazdekhosti (Ph.D.), “Feasibility Evaluation of a Vibration-based Leak Detection Technique for Sustainable Water Distribution System Monitoring,” Co-Advised with Drs. Piratla and Khan, (August 2017).

Garrison Stevens (Ph.D.), “Experiment-based Validation and Uncertainty Quantification of Partitioned Models: Improving Predictive Capability of Multi-scale Plasticity Models,” (August 2016).

Saurabh Prabhu (Ph.D.), “Data Assimilation Techniques for Structural Health Monitoring Applications as Applied to Masonry Monumental Structures,” (December 2015).

Jie Lu (Ph.D.), “Robust modeling framework for rehabilitating transportation infrastructure under uncertainty,” Co-Advised with Dr. Huang, (December 2015).

Wenping Gong (Ph.D.), “Robust Geotechnical Design of Drilled Shafts,” Co-Advised with Dr. Juang, (December 2014).

Ismail Farajpour (Ph.D.), “Optimization-based Strong Coupling of Multiple Single-Solver Models,” (December 2013).

Lei Wang (Ph.D.), “Robust Design of Braced Excavation in Clay,” Co-Advised with Dr. H. Juang, (December 2013).

Zhifeng Luo (Ph.D.), “Robust Performance-based Structural Design,” Co-Advised with Dr. H. Juang, (August 2013).

Kendra Van Buren (Ph.D.), “Assuring Robustness against Uncertainty in Predictive Modeling of Wind Turbine Blades,” (December 2012).

Murray Fisher (Ph.D.), “Vibration Based Structural Health Monitoring of Bridge Pier and Abutment Scour,” Co-Advised with Dr. A. Khan, (December 2012).

Josh Hegenderfer (Ph.D.), “Resource Allocation Framework: Validation of Numerical Models of Complex Engineering Systems against Physical Experiments,” (August 2012).

Zhe Luo (Ph.D.), “Simplified Random-Field Framework for Reliability-Based Design against Basal-Heave Failure in A Braced Excavation in Clay,” Co-Advised with Dr. Juang, (December 2011).

Masters Graduates as the Faculty Advisor

Garrison Stevens (M.S.), “Stochastic Wavenumber Estimation: Damage Detection through Simulated Guided Lamb Waves,” (December 2014).

Robert Roper (M.S.), “Impact Resistance of Steel Decks,” (December 2014).

Matthew Egeberg (M.S.), “Optimal Design of Validation Experiments for Calibration and Validation of Complex Numerical Models,” (August 2014).

Parker Shields (M.S.), “Role of Robustness to Uncertainty and Fidelity to Data in Experiment based Validation of Numerical Models,” (December 2013).

Lei Wang (M.S.), “Probabilistic Back Analysis of Geotechnical Systems,” Co-Advised with Dr. Juang, (August 2013).

Md. Chowdhury (M.S.) “Vibration Based Structural Health Monitoring of Bridge Pier and Abutment Scour,” Co-Advised with Dr. Khan, (August 2013).

Ashley Haydock (M.S.), “Noise-Insensitive Prognostic Evaluation of Historic Masonry Structures,” (May 2013).

Tun Li (M.S.), “Load Carrying Capacity Assessment of a Masonry Dome,” (August 2012).

Sarah Dalton (M.S.), “Robust Structural Health Monitoring for Infrastructure Management,” Co-Advised with Dr. Juang, (December 2011).

Saurabh Prabhu (M.S.), “Structural Health Monitoring of Historic Masonry Monuments,” (August 2011).

Kendra Van Buren (M.S.) “Structural Health Monitoring of Shell Type Wind Turbine Blades,” (May 2011).

Current Doctoral Students as the Faculty Advisor

Xiaoyu Hu (Ph.D. student), “Damage Detection in Steel Structures Using Bayesian Calibration Techniques,” (*Expected graduation date: December 2016*).

Marcos Martinez (PhD. Student), “An Integrated Numerical and Experimental Study: Structural Behavior of Dry-Stacked Systems,” (*Expected Graduation date: December 2017*).

William Robert Locke (PhD. Student), “TBD: Health Monitoring of Transportation Infrastructure,” (*Expected Graduation date: May 2020*).

Evan Chodora (PhD. Student), “TBD: Design of Engineering Systems,” (*Expected Graduation date: December 2021*).

Andre Apostol (PhD. Student), “TBD: Interdependent Infrastructure Systems,” (*Expected Graduation date: December 2021*).

Tim Parker (Ph.D. student, part time), “Ductility-sensitive Rehabilitation of Historic Masonry Monuments,” (*Expected graduation date: December 2018*).

Carl Ehrett (Ph.D. Student in the Mathematical Sciences department), “TBD,” Co-advised with Dr. Andrew Brown, (*Expected Graduation date: December 2019*).

Justin Sybrandt (Ph.D. Student in the Computer Science department), “TBD,” Co-advised with Dr. Ilya Safro, (*Expected Graduation date: May 2020*).

Lee Redfearn (Ph.D. Student in the Mathematical Sciences department), “TBD,” Co-advised with Dr. Taufiqar Khan, Ahmad Tarawneh (PhD. Student), “TBD,” (*Expected Graduation date: December 2020*).

Current Masters Students as the Faculty Advisor

Aditya Kamath (M.S. student), “Foresight for Disaster Management: Infrastructure Risk Index Analysis,” (*Expected Graduation date: May 2017*).

Visiting Students (with thesis) as the Faculty Advisor

Baptiste Devaux, (Ph.D. candidate), University Franche Comte, Besancon, France (*January-May 2014*)

Graduates students as the Committee Member

Liam Sullivan, M.S., May 2010 advised by Dr. Nielson

Josh Caron, M.S., December 2012 advised by Dr. Pang

Mengyu Yang, M.S., August 2013, advised by Dr. Pang

Michael Willis, M.S., May 2014, advised by Dr. Ross

Abby Liu, Ph.D., August 2014 advised by Dr. Pang

UNIVERSITY AND PUBLIC SERVICE

Departmental Committees

Chair, Faculty Search Committee (2016-present)

Chair, Advisory Committee (2015- present; inactive during FY 2016-17)

Member, Advisory Committee (2013-2015)

Member, Graduate Program Committee (2011-present)
Member, Diversity and Outreach Committee (2010-2013 and 2016-2017)
Member, Scholarships and Awards Committee (2010-2013)
Member of Faculty Search Committees (three times) (2011-2012)

College level Committees

Member, Dean's Advisory Council (2013- present)
Member, Academic Grievance Committee (2016, present)
Member, Department Chair Search Committee (2013)

University level Committees

Member, President Clements' Leadership Program (2016-present)
Member, The Clemson University Computational Advisory Team (2015-present)
Member, Provost Aziz's Leadership Program (2015-present)
Member, Associate Provost Search Committee (2015)
Member, University Awards Committee (2014-present)
Member, University Assessment Committee (2011-2014)

TEACHING

CE 301, Structural Analysis
CE 299/399/499, Creative Inquiry on Structural Health Monitoring
CE 401/601, Matrix Structural Analysis
CE 404/604, Masonry Structural Design
CE 806, Structural Dynamics
CE 809, Structural Health Monitoring
CE 893, Model Validation and Uncertainty Quantification (to be offered FY 2016-17)

Sunday, March 12, 2017