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Dr. Steve Cai，a PE since 1995, is a Professor at the Department of Civil and Environmental Engineering. He is serving as the coordinator of Structures Group and director of Bridge Innovative Research and Dynamics of Structures laboratory. He has been awarded Edwin B. and Norma S. McNeil Distinguished Professorship since 2010. Dr. Cai has recently received a few recognitions and awards, including the LSU Rainmakers Award in 2008 and 2009, LSU Distinguished Faculty Award in 2014, and the Best paper award from American Society of Civil Engineers (ASCE), Earth and Space Conference in 2008, and co-authored with his former Ph.D. student wining the prestigious "Collingwood Prize" from ASCE in 2009. Dr. Cai was elected Fellow of ASCE in 2010.

Dr. Cai received his Ph.D. degree in 1993 from the Department of Civil Engineering, University of Maryland, College Park, Maryland; M.S. degree in 1987 from the Department of Civil Engineering, Tsinghua University, Beijing, China; and B.S. degree in 1983 from the Department of Civil Engineering, Zhejiang University, Hangzhou, China. He obtained a Graduate Fellowship from the University of Maryland and a Graduate Research Fellowship from the Federal Highway Administration (1990-1993).

Dr. Cai began his employment in the Department of Civil and Environmental Engineering at Louisiana State University (LSU) as a tenure-track Assistant Professor in August, 2001, was appointed as a tenured associate professor in Aug. 2006, and was promoted to full professor in Aug. 2010. Dr. Cai's current position involves 50% in teaching and 50% in research effort distribution. Prior to his arrival at LSU, Dr. Cai had one year of experience as a tenure-track Assistant Professor at Kansas State University (2000-2001); four years of experience as a structural researcher and development senior engineer at the Florida Department of Transportation (1996-2000); and three years of experience as a consulting engineer at Michael Baker Jr., Inc. (1993-1996).

Since he joined LSU in 2001, Dr. Cai served as Principal Investigator for more than 50 federal, state government, and university funded projects. His research interests include bridge performance evaluation/instrumentation/testing, traditional and new material applications in infrastructures, performance and hazard mitigation of costal structures under wave/wind actions, and long-span bridge aerodynamics. Dr. Cai has published over 390 technical papers in journals (over 200) and conference proceedings in these areas mainly related to bridges. He has graduated 15 Ph.D. students at LSU as the major professor. His students are well placed including a few on the faculty of universities in US and abroad such as University of Connecticut, Colorado State University, Hunan University, Nanyang Institute of Technology, etc.

Dr. Cai is currently serving on a few national and international committees including former chair of Experimental Analysis and Instrumentation Committee, ASCE. He served and has been serving on many editorial boards including as Associate Editor of Journal of Bridge Engineering, and Journal of Engineering Mechanics. He also served as advisor for ASCE and other student organizations. Other major professional services include served as Secretary and Treasurer of American Association for Wind Engineering (the only organization of its kind in North America), and served Engineering Project Selection committee, East Baton Rouge Parish, representing LSU.

EDUCATIONS AND PROFESSIONAL REGISTRATIONS

1993 Ph.D. in Civil/Structural Engineering, University of Maryland, College Park
1987 M.S. in Civil/Structural Engineering, Tsinghua University, Beijing, China
1983 B.S. in Civil/Structural Engineering, Zhejiang University, Hangzhou, China
1995 P.E. registration in Maryland
1996 P.E. registration in Florida (inactive)

PROFESSIONAL POSITIONS HELD

08/2010- **Professor**, Edwin B. and Norma S. McNeil Distinguished Professor Dept. of Civil Engrg., Louisiana State Univ., Baton Rouge, LA
2006-2010 **Associate Professor**, Dept. of Civil Engrg., Louisiana State Univ., Baton Rouge, LA
2001-2006 **Assistant Professor**, Dept. of Civil Engrg., Louisiana State Univ., Baton Rouge, LA
2000-2001 **Assistant Professor**, Dept. of Civil Engrg., Kansas State Univ., Manhattan, Kansas
1996-2000 **Senior Struc. Engineer**, Structures Research Center, Florida DOT, Tallahassee, FL
1993-1996 **Project Engineer**, Complex Structures Group, Michael Baker Jr., Inc., Pittsburgh, PA
1991-1993 **Dwight D. Eisenhower Research Fellow**, NHI/FHWA, McLean, VA
1990-1993 **Graduate Fellow/Ph.D. candidate**, University of Maryland, College Park, MD

AWARDS OR PRIZES

1993 Best Student Paper Award: 10th International Bridge Conference, Pittsburgh
1993 Merit Award: James F. Lincoln ARC Welding Foundation
1994 Engineering QAQC Group Award: Michael Baker Jr., Inc.
2006 Achievement Awards, Department of CEE, LSU
2008 Best paper award, ASCE Earth and Space conference, Long Beach, CA
2008 Rainmaker of LSU - 100 outstanding research and creative faculty
2008 Roy Paul Daniels Distinguished Professor, LSU (yearly renewable)
2009 Nominated for H.M."Hub" Cotton Award for faculty Excellence, LSU
2009 Nominated for "Alfred Noble Prize", ASCE.
2009 Co-authored a paper with his student that has been awarded for "Collingwood prize", ASCE. (The certificate goes only to the 35 years or younger junior author according to the award criteria)
2009 Rainmaker of LSU - 100 outstanding research and creative faculty
2010 Fellow, ASCE
2010 Edwin B. and Norma S. McNeil Distinguished Professor, LSU (permanent)
2011 Research Achievement Award, Department of CEE, LSU
2011 Outstanding Young Researcher Award, Louisiana Transportation Research Center Foundation. In recognition of his accomplishments in the field of transportation
2012 Leslie D. Martin Award of Merit for the Outstanding Technical Publication" Bridge Design Manual, Third Edition", Precast/Prestressed Concrete Institute
2012 Certificate of Appreciation for the Outstanding Lecture at the 2012 New Millennium Yuelu International Forum on Advanced Construction Technology, Hunan University, China
2014 Distinguished Faculty Award, Louisiana State University, in recognition of the accomplishments in teaching, research and service (one of the five awardees at LSU)
2017 Michael Gaus Distinguished Service Award, American Association for Wind Engineering, In Recognition of His Contributions To Wind Engineering For Involvement in AAWE Activities, Research, Consulting, and Outreach, May 23, 2017, Americas Conference on Wind Engineering, Gainesville, Florida

MAJOR PROFESSIONAL SERVICE AND HONORS

2006 Selected as one of the 12 delegates to represent USA side for the US-Japan Wind Engineering workshop, July 20-22, 2006, Tsukuba, Japan

2010 Selected as one of the 12 delegates to represent USA side for the US-Japan Wind Engineering workshop, July 27-28, 2010, Chicago, USA

2010 Selected as one of the 17 delegates to represent USA side for the US-Japan Bridge Engineering workshop, Sept. 20-22, 2010, New Orleans, USA

2016 Selected as one of the 18 delegates to represent USA side for the US-Japan Wind Engineering workshop, May 12-14, 2016, Tokyo, Japan

2009-2011, Board Member, Engineer and Surveyor Selection Board, Dept of Public Works, City of Baton Rouge, Parish of East Baton Rouge

2007-2010, **Committee Chair**, Experimental Analysis & Instrumentation, ASCE
2005-2010, **Associate Editor**, Journal of Bridge Engineering, ASCE
2005-2017, **Secretary/Treasurer**, American Association for Wind Engineering
2010-present, **Associate Editor**, Journal of Engineering Mechanics, ASCE
2016-present. **Editorial Board**: Engineering Structures
2012-present. **Editorial Board**: Wind and Structures
2017-present ***Editorial Board***: Frontiers in Structural and Civil Engineering
2014-present, **Editorial Board**: Structural Monitoring and Maintenance
2017-present **Regional Editor North America**, Int. Journal of Lifecycle Performance Engineering
2013-present, **International Editorial Board**: Advances in Structural Engineering
2010-present, **Editorial Board**: International Journal of Structural Engineering
2011-present, **Editorial Board**: Transportation Science and Engineering (in Chinese) (2011--present)
2015-present, **Editorial Board**: Engineering Mechanics (in Chinese) (2015-present)

- Reviewer for many funding agencies and more than 30 technical journals
- Numerous invited presentations
- Served/serving on many technical committees

BRIEF DESCRIPTION OF PROFESSIONAL EXPERIENCE

2001.8-present **Assistant Professor/Associate Professor/ Professor**, Dept. of Civil and Envir. Engrg., Louisiana State Univ., Baton Rouge, LA

Course Taught: CE7430 Structural Design for Dynamic Loads, CE7409 Advanced Concrete Theory, CE7701 Advanced Bridge Analysis and Performance Evaluation, CE4440 Design of Steel Structures, CE4781 Bridge analysis and Design in AASHTO LRFD Method, CE4420 Principle of Prestressed Concrete, CE4410 Principle of Reinforced Concrete, CE3415 Structural Analysis I,

Research: Conducting research in bridge-related areas such as bridge performance assessment and instrumentation, new material applications in bridge engineering, traffic-induced vibration of bridges, hurricane/wind effects on coastal structures

2000.8-2001.8 **Assistant Professor**, Dept. of Civil Engrg., Kansas State University, Manhattan, Kansas

Courses taught: CE833 Advanced Structural Analysis II, CE742 Advanced Steel/Bridge Design CE530 Statics and dynamics.

Research: Strut-and-tie model in concrete structures, concrete repairs with FRP materials, FRP full composite deck, and bridge dynamic vibration Controls.

1996-2000 **Senior Structural Engineer**, Structures Research Center, Florida DOT, Tallahassee, Florida

The Structures Research Center, part of the Structures Design Office of Florida DOT, is responsible for the bridge testing, special study and review, complex structural analysis, and research and development. As a senior engineer, I was involved in these activities. Some of my works are summarized below.

Reinforced/Prestressed Concrete and Failure Investigation

As a principal investigator, I developed a Tied-Arch model for shear design of concrete structures, mainly to improve the strut-and-tie model for concrete beam-ends and deep beam design. The model predictions were compared with test results and those from AASHTO Standard and LRFD code specifications. This analytical model was also used to investigate the effects of mechanical anchorage on shear performance of pretensioned beams.

I investigated also many cracking problems of concrete structures, such as longitudinal cracking of precast slab system with a cast-in-place concrete topping, cracking of pier cap, and cracking of segmentally constructed box girders due to insufficient prestressing or loss of tendons. Three dimensional strut-and-tie model and 3-D finite element solid modeling were used in some of these analyses. A Beam-Strut-Tie model to calculate the deflection of cracked members was developed.

Advanced Composite Material and Structural Repair/Strengthening

I was involved in developing techniques for structural repair and strengthening. Most of the previous work is experimental study of individual members. One of my activities was to investigate the effect of repair/strengthening on the performance of bridge systems. Another activity was to extend the Tied-Arch and Beam-Strut-Tie models to FRP concrete structures for shear design and deflection calculation.

Steel Structures and Curved Bridges

I conducted a variety of bridge analyses on steel structures such as load rating of curved box (about 18 box girder curved bridges) and I-girder bridges. I conducted 3-D finite element analyses of curved steel plate girder bridges to investigate warping stresses.

Structural Analysis, Testing, Evaluation, and Monitoring

I was involved in planning the instrumentation for remote monitoring and nondestructive testing. I conducted load testing of field bridges to diagnose bridge performance in terms of load distribution, dynamic impact factor, and load capacity. I was also involved in laboratory testing including manhole inlets, etc.

As one of my major job responsibilities, I conducted finite element analyses pre and post bridge testing (about 20 bridges per year), and evaluate bridge performance using analytical and testing results. Procedures for bridge testing and evaluation were developed and published.

I was the FDOT participant to develop the ***Self-Monitoring Advanced Remote Technology System (SMARTS)*** conducted by SMARTS consortium. A field bridge in Florida was instrumented and monitored with this SMARTS system. I was also expanding my experience into damage detection and control/smart structures.

Project Development, Management and Technical Review

I developed a variety of proposals and managed in-house and contracted university researches, reviewed designs and special studies submitted by consultants, and reviewed many research reports submitted by universities.

1993-1996 **Project Engineer**, Complex Structures Group, Michael Baker Jr., Inc., Pittsburgh, PA

As a professional engineer and group leader for structural analysis, I designed and analyzed several complex bridges, and developed finite element software to deal with the special needs of these complex structures.

Bridge Analysis and Design

Mon River Arch Bridge (steel and concrete materials, 894-ft main span, Pittsburgh) - I was responsible for finite element analyses including nonlinear static, buckling, wind engineering, multi-mode seismic, and solid finite element modeling of connections. I designed arch rib struts, cables, cable connections, and post-tensioning of concrete arch ribs. I was also involved in foundation designs including drilled shaft, spread footing and slurry wall alternatives.

Maysville Cable-Stayed Bridge (steel and concrete materials, 1050-ft main span, Kentucky) - I conducted nonlinear static, dynamic, wind engineering and segmental construction analyses. I also conducted finite element analyses of cable snapping, and cable-girder connection with solid modeling. I developed design procedure and checked the design of steel-concrete composite girders with a post-tensioned deck.

Curved Flyover Bridge (steel plate girder, 2028-ft total length, Pittsburgh)-I conducted finite element analysis and dynamic analysis for future convergence to light rail transit service. I also designed substructure including pier caps, piers and drilled shafts.

Software Development

I was a group leader in developing Baker Segmental 1, a 2-D nonlinear finite element package mainly to conduct segmental construction analysis of Maysville cable-stayed bridge. This package can also be used for the analyses of suspension bridges and frame buildings. Particularly, I was responsible to enhance the analysis module that is featured in nonlinear cable element, analysis capabilities of creep, shrinkage, and staged construction. I developed also live load module using influence line concept to calculate HS20 loading effects, and coordinated the development of graphics interface module for pre and post processing.

I developed also MACROs to quickly establish 3-D finite element models and to conduct unit load analysis for Mon River Arch Bridge, taking advantage of the pre and post processing capability of ANSYS program. An influence surface was generated with the unit-load effects and then the influence surface was integrated to predict force envelopes due to 3-D effects.

1990-1993 **Dwight D. Eisenhower Fellow**, T-F Highway Research Center, FHWA, McLean, Virginia
Graduate Fellow, University of Maryland, College Park, MD

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Finite Element Based Dynamic/Aerodynamic Program

I developed a finite element package for wind flutter and buffeting analyses of long-span bridges in both laminar and turbulent winds. Both eigenvalue (for laminar wind) and random parametric excitation (for turbulent wind) approaches were developed for flutter analyses, and both spectral analysis and random parametric excitation methods were developed for the buffeting analysis.

Finite Element Analysis and Retrofitting

Deer Isle Suspension Bridge (1080-ft main span, Maine)- I conducted nonlinear static, linear dynamic, wind flutter and buffeting analyses. Based on these analyses, the existing bracing system for the improvement of aerodynamic behavior was evaluated, and aerodynamic retrofitting method was developed through finite element modeling.

Luling Cable-Stayed Bridge (1222-ft main span, Louisiana)– I conducted nonlinear static, linear dynamic and wind flutter analyses, and compared the predicted aerodynamic behavior with available laboratory and field measurements.

1985-1990 **Research Assistant**, Tsinghua University, Beijing, China

Temperature and Thermal Stress Analysis of Steel Structures

I was developing a computer program for thermal analysis to predict residual stresses of welded beam-column connections. The residual stress is an important parameter for fatigue and fracture failure. The program consists of two modules. The first module predicted time-dependent temperature distribution due to welding; and the second module determined thermal stress due to the temperature change.

Steel Beam-Column and Code Specifications

I compared the Chinese and AISC code specifications for beam-column designs, and evaluated the AISC design method using experimental results, including both welded and rolled shapes. I developed a computer program to predict ultimate strength of beam-columns under biaxial loading including effects of both material and geometric nonlinearities. Sixteen full-scale H beam-columns were tested to verify the numerical program.

1983-1985 **Instructor**, Dept. of Civil Eng. Zhengzhou Institute of Technology, China

I taught structural analysis courses, directed senior students for the analysis and design of a high-rise building and a concrete frame building. In addition, I was involved in large-scale experiments on steel-concrete composite column, and beam-slab floor system.

Publications

Monographs and Book Chapters

1. **Cai, C. S.**, and Montens, S. (1999). "Wind Effects on Long-Span Bridges." Chapter 57, The Handbook of Bridge Engineering, Edited by Chen, W.F., and Duan, L., CRC Press.
2. Shahawy, M., and **Cai, C. S.** (2003) "Bridge Load Rating." Chapter 18, Bridge Design Manual, Precast/Prestressed Concrete Institute.
3. **Cai, C. S.**, Zhang, W. and Montens, S. (2012). "Wind Effects on Long-Span Bridges." Chapter 22, The Handbook of Bridge Engineering, Edited by Chen, W.F., and Duan, L., CRC Press.
4. Lu Deng and **Cai, C. S.**, (2009). "Framework of bridge-vehicle interaction and its applications: System Identification Based on their Coupled Vibration" 160 pages, ISBN-10: 3639145755, ISBN-13: 978-3639145755, VDM Verlag Dr. Muller, Germany.
5. Jianren Zhang and **Cai, C. S.**, (2010). "International Symposium of Life-cycle performance of bridges and structures", editors, proceeding, ISBN 978-7-03-027815-9, Science Press, Beijing, China.
6. Wei Zhang and **Cai, C. S.**, (2012). "Fatigue Performance and Life Cycle Prediction of Existing Bridges: Dynamic Effects from Combined Random Loads of Winds and Vehicles" 156 pages, ISBN-10: 3659135380, ISBN 978-3-659-13538-5, LAP Lambert Academic Publishing.
7. Kong, X. and **Cai, C. S.**, (2013). "Framework of Damage Detection in Vehicle-Bridge Coupled System: Application to Bridge Scour Monitoring" 260 pages, ISBN-10: 3659402699, ISBN-13: 978-3659402692, LAP Lambert Academic Publishing.
8. Xiong, W., **Cai, C. S.**,, Xiao, R.C. (2014), "Advanced Composites in Bridge Construction and Repair" Chapter 8-The Use of Carbon Fiber Reinforced Polymer (CFRP) Composites for Cable-stayed Bridges", edited by J. Kim, pp 210-264, Woodhead Publishing Limited, SBN-13: 978-0857096944.
9. Li, Y.L., **Cai, C. S.**,, and Yin, T.H. (2015). "Wind loads and wind-induced responses of vehicle-bridge systems" Wind and Strucutures, special issue editor
10. Jianren Zhang and **Cai, C. S.**, (2015). "The 2nd International Symposium of Life-cycle performance of bridges and structures", co-editor, abstract, Changsha, China.

Published Refereed Journal Articles
(* indicates the corresponding author)

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1. Fan, Fenghong, Zhen Liu, Guoji Xu, Hui Peng, and **C.S. Cai** (2018) "Mechanical and thermal properties of fly ash based geopolymers", Construction and Building Materials, 160, 66–81, https://doi.org/10.1016/j.conbuildmat.2017.11.023
2. He, J., F. Pan, **C.S. Cai***, Filmon Habte, and Arindam Chowdhury (2018) "Finite-Element Modeling Framework for Predicting Realistic Responses of Light-Frame Low-Rise Buildings under Wind Loads", Engineering Structure (in print)
3. He, J., F. Pan, and **C.S. Cai*** (2018) "Assessment of ASCE 7-10 for Wind Effects on Low-Rise Wood Frame Buildings with Database-Assisted Design Methodology", Wiind and Structures (accepted)
4. Yu, Yang, **C.S. Cai*** and Lu Deng. (2018) "Nothing-on-road bridge weigh-in-motion considering the transverse position of the vehicle." Structure and Infrastructure Engineering, DOI:10.1080/15732479.2017.1401095Vol. 0, Iss. 0,0 (online)

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5. Deng, L., Wang, W, and **Cai, C.S.** (2017) "Effect of pavement maintenance cycle on the fatigue reliability of simply-supported steel I-girder bridges under dynamic vehicle loading" Engineering Structures 133, 124–132.
6. He, W., Deng, L., Shi H., **Cai, C.S.**, Yang Yu (2017) "A novel virtual simply-supported beam method for detecting the speed and axles of moving vehicles on bridges" J of Bridge Eng., ASCE, 04016141.
7. He, J., Pan, F., **Cai, C.S.***, (2017). "A review of wood-frame low-rise building performance study under hurricane winds" Engineering Structures, 141, 512-529.
8. Hu, Peng, Yongle Li, GJ Xu, Yan Han, **CS Cai**, Fanrong Xue (2017). "Investigation of the longitudinal wind power spectra at the gorge terrain", Advances in Structural Engineering, DOI: 10.1177/1369433217693632
9. Hu, S., J Peng, J Zhang, **CS Cai** (2017). "Influences of Time, Temperature, and Humidity on Chloride Diffusivity: Mesoscopic Numerical Research," Journal of Materials in Civil Engineering, 29 (11), 04017223
10. Kong, X., **Cai, C.S.***, Hu, J.X., Xiong, W. and Peng, H. (2017) "Field Application of an Innovative Bridge Scour Monitoring System with Fiber Bragg Grating Sensors", special issue of structural monitoring, J of Aerospace Engineering, ASCE, 30(2), 10.1061/(ASCE)AS.1943-5525.0000654 , B4016008.
11. Kong, X, **C.S. Cai***, L. Deng, and W. Zhang (2017) "Using Dynamic Responses of Moving Vehicles to Extract Bridge Modal Properties of a Field Bridge" J. of Bridge Engineering, ASCE, 22(6), http://dx.doi.org/10.1061/(ASCE)BE.1943-5592.0001038#sthash.oc3hhsLb.dpuf
12. Kong, X., Ho, S.C., Song, G.B., and **Cai, C.S.** (2017). "Scour Monitoring System using Fiber Bragg Grating Sensor and Water-swellable Polymers" J. of Bridge Eng., ASCE, 22(7), 04017029-1.
13. Kong, X, **C.S. Cai**, and J.X. Hu (2017). "The State-of-the-Art on Framework of Vibration-Based Structural Damage Identification for Decision Making." Appl. Sci. **2017**, 7(5), 497; doi:10.3390/app7050497
14. Shen, L., Y Han, **CS Cai**, G Dong, J Zhang, P Hu (2017) "LES of wind environments in urban residential areas based on an inflow turbulence generating approach" WIND AND STRUCTURES,
15. Wang, D., Yongming Liu, Bo Kong, **C. S. Cai**, and Yang Liu (2017) "Simple Analytical Model for Vibration Frequency Calculation of Anchor Span Strand in Suspension Bridges" J. of Eng. Mechanics, ASCE, 143(10), 04017115-1 to 10.

16. Xiong, W., Tang, P., Kong, B., **Cai, C.S.** (2017)" Computational Simulation of Live-bed Bridge Scour Considering Suspended Sediment Loads", Journal of Computing in Civil Engineering, ASCE, Vol. 31, Issue 5 (September 2017)
17. Xiong, W, **Cai, CS**, Kong, B, and Ye J (2017) "Overturning-Collapse Modeling and Safety Assessment for Bridges Supported by Single-Column Piers", Journal of Bridge Engineering, 22(11), 04017084-1 to13.
18. Xu, Guoji, **Cai, C.S. *** (2017) "Numerical investigation of the Lateral Restraining Stiffness Effect on the Bridge Deck-Wave Interaction under Stokes Waves" Engineering Structures, 130, 112-123, http://dx.doi.org/10.1016/j.engstruct.2016.10.007.
19. Xu. G.J. and **Cai, C.S. ***, and Lu, D. (2017) "Numerical Prediction of Solitary Wave Forces on a Typical Coastal Bridge Deck with Girders." Structure and Infrastructure Engineering, 13(2), http://dx.doi.org/10.1080/15732479.2016.1158195.
20. Xu, G.J., **Cai, C.S. ***, and Chen, Q. (2017) "Countermeasure of Air Venting Holes in the Bridge Deck–Wave Interaction under Solitary Waves," Journal of Performance of Constructed Facilities, 31(1), 10.1061/(ASCE)CF.1943-5509.0000937, 04016071.
21. Xu, G.J., **C.S. Cai**, Y. Han, Chunliang Wu, and Fanrong Xue (2017) "Numerical Assessment of the Wave Loads on Coastal Twin Bridge Decks under Stokes Waves" Journal of Coastal Research.
22. Yu, Y., Deng, L., Wang, W., and **Cai, C.S.** (2017). "Local impact analysis for deck slabs of prestressed concrete box-girder bridges subject to vehicle loading." Journal of Vibration and Control, 23(1), 31-45, DOI: 10.1177/1077546315575434.
23. Zou, L., Shi, T, Song, J., **Cai, C.S.** (2017). "Application of the high-frequency base balance technique to tall slender structures considering the effects of higher modes." Engineering Structures, 151(2017) 1-10, https://doi.org/10.1016/j.engstruct.2017.08.005.

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24. Kong, B., **Cai, C.S. ***, Zhang, Y. (2016) "Parametric Study of Integral Abutment Bridge Supported by Prestressed Precast Concrete Piles" Engineering Structures. Engineering Structures 120, 37–48, http://dx.doi.org/10.1016/j.engstruct.2016.04.034 0141-0296.
25. Kong, X. and **Cai, C.S. *** (2016) "Scour Effect on Bridge and Vehicle Responses under Bridge-vehicle-wave Interaction" J. of Bridge Engineering, ASCE, 21(4), 04015083-1-16, DOI: 10.1061/(ASCE)BE.1943-5592.0000868. (Corresponding author)
26. Kong, X., **Cai, C.S. ***, and Kong, B. (2016) "Numerically Extracting Bridge Modal Properties from Dynamic Responses of Moving Vehicles" J. of Engineering Mechanics, 142(6), 04016025, ASCE (Corresponding author)
27. Li, Yan, **Cai, C.S.**, Liu, Yang, Chen, Yanjiang, Liu, Jiafeng (2016) "Dynamic analysis of a large span specially shaped hybrid girder bridge with concrete-filled steel tube arches" Enginering Structures, 106, 243-260 .
28. Li, Y.L., Zhu, Siyu, **Cai, C. S.**, Cheng Yang, and Shizhong Qiang (2016) "Dynamic Response of Railway Vehicles Running on Long-Span Cable-Stayed Bridge Under Uniform Seismic Excitations", International Journal of Structural Stability and Dynamics, 16 (5), doi: 10.1142/S0219455415500054, 1550005-1 to 25.
29. Li , Yongle , Xu, Xinyu, Zhou, Yu , Cai, CS and Qin, Jingxi (2016) "An interactive method for the analysis of the simulation of vehicle–bridge coupling vibration using ANSYS and SIMPACK" Proceedings of the Institution of Mechanical Engineers, Part F: Journal of Rail and Rapid Transit, 1-17, DOI: 10.1177/0954409716684277

30. Liu, Y., Kong, X., **Cai, C.S.**, Wang, D. (2016) "Driving effects of vehicle-induced vibration on long-span suspension bridges" Structural Control and Health Monitoring, DOI:10.1002/stc.1873.
31. Liu, Z., **Cai, C.S. ***, Liu, F.Y., Fan, F.H (2016) "Feasibility Study of Loess Stabilization with Fly Ash Based Geopolymer" Journal of Materials in Civil Engineering, ASCE, 28(5), 04016003-1-8, DOI: 10.1061/(ASCE)MT.1943-5533.0001490(Corresponding author)
32. Liu, Z., **Cai, C.S. ***, Peng, H., Fan, F.H (2016) "Experimental Study of the Geopolymeric Recycled Aggregate Concrete," , Journal of Materials in Civil Engineering, ASCE, 28(9), 04016077-1, DOI:10.1061/(ASCE)MT.1943-5533.0001584 (Corresponding author)
33. Peng, H., Zhang, J.R., Shang, S.P., Liu, Y., and **Cai, C. S.** (2016) "Experimental study of flexural fatigue performance of reinforced concrete beams strengthened with prestressed CFRP plates," Engineering Structures, 127(15), 62-72.
34. Xia, M., **Cai, C.S. ***, Fang Pan, and Yang Yu (2016) "Estimation of extreme structural response distributions for mean recurrence intervals based on short-term monitoring," Engineering Structures 126, 121–132, http://dx.doi.org/10.1016/j.engstruct.2016.07.052.
35. Xiang, Xinyun, **Cai, C.S. ***, Zhao, Renda, Peng, Hui (2016)"Numerical analysis of recycled aggregate concrete-filled steel tube stub columns" Advances in Structural Engineering, 9(5), 717-729 (Corresponding author)
36. Xiong, W., Tang, P., Kong, B., **Cai, C.S.**, (2016)"Reliable Bridge Scour Simulation using Eulerian Two-Phase Flow Theory", Journal of Computing in Civil Engineering, ASCE, 30(5), 04016009.
37. Yang, Jian; Kong, Bo; **Cai, C.S.**; and Wang, Jinsheng (2016) "Behavior of High-Speed Railway Ballastless Track Slabs Using Reactive Powder Concrete Materials" Journal of Transportation Engineering, ASCE, 142(8), 10.1061/(ASCE)TE.1943-5436.0000849, 04016031.
38. Yin, Xinfeng, Liu, Yang, Guo, shihui, Zhang, Wei, and **Cai, C.S. *** (2016) "Three-dimensional vibrations of a suspension bridge under stochastic traffic flows and road roughness" International Journal of Structural Stability and Dynamics, 16 (7), 1550038 (22 pages) DOI: 10.1142/S0219455415500388 (Corresponding author)
39. Yin, X.F., Liu, Y., Deng, L., and CS Cai (2016) "Impact factors of bridges in service under stochastic traffic flow and road surface progressive deterioration," Advances in Structural Engineering, 19(1), 38-52.
40. Yu, Yang; **Cai, C.S. ***, and Deng, Lu (2016) "State-of-the-art Review on Bridge Weigh-in-motion Technology" Advances in Structural Engineering, 19(9), 1-17, DOI: 10.1177/1369433216655922

Wind and Hurricane Engineering

41. Han, Yan, Chen, Hao, **Cai, C.S. ***, Xu, Guo, Shen, Lian, Hu, Peng, (2016). "Numerical analysis on the difference of drag force coefficients of bridge deck sections between the global force and pressure distribution methods" J. of Wind Eng. and Industrial Aerodynamics, 159, 65-79. (Corresponding author)
42. Hu, Peng, Li, Yongle, Han, Yan, Cai, Steve C. S. and Xu, Xinyu (2016). "Numerical simulations of the mean wind speeds and turbulence intensities over simplified gorges using the SST k-ω turbulence model." ENGINEERING APPLICATIONS OF COMPUTATIONAL FLUID MECHANICS, 10(1), 361–374.
43. Hu, P, Li, Y.L., Han, Y, Cai, C.S., Xu, G. (2016) "Wind tunnel tests on the characteristics of wind fields over a simplified gorge" Advances in Structural Engineering, 1-13, DOI: 10.1177/1369433216680635

44. Liu, X.Z., Han, Y., **Cai, C.S. ***, Levitan, M., and Nikitopoulos, D. (2016) "Wind tunnel tests for mean wind loads on road vehicles" J. of Wind Eng. and Industrial Aerodynamics, 150, 15-21. http://dx.doi.org/10.1016/j.jweia.2015.12.004 (Corresponding author)
45. Xu. G.J. and **Cai, C.S.**, Hu, P., and Dong, Z. (2016) "Component level-based assessment of the solitary wave forces on a typical coastal bridge deck - and the countermeasure of air venting holes" Practice Periodical on Structural Design and Construction, 21(4), 10.1061/(ASCE)SC.1943-5576.0000291, 04016012, ASCE.
46. Zou, Lianghao, Guoji Xu, C.S. Cai and Shuguo Liang (2016) "Wind tunnel tests of 3D wind loads on tall buildings based on torsional motion-induced vibrations." Wind and Structures, 23(3), 231-251, DOI: http://dx.doi.org/10.12989/was.2016.23.3.231.

2015(23)

Bridge and Structural Engineering

47. Deng, L., Yu, Y., Zou, Q., and **Cai, C.S.** (2015). "State-of-the-Art Review of Dynamic Impact Factors of Highway Bridges." J. Bridge Eng., ASCE, 20(5), DOI: 10.1061/(ASCE)BE.1943-5592.0000672, 04014080.
48. Han, W., Wu, J., **Cai, C.S.**, and Chen, S.R. (2015). "Characteristics and Dynamic Impact of Overloaded Extra Heavy Trucks on Typical Highway Bridges." *J. Bridge Eng.*, ASCE, 20(2), 10.1061/(ASCE)BE.1943-5592.0000666 , 05014011.
49. Kong, B., **Cai, C.S. ***, Kong, X. (2015)" Field monitoring study of an integral abutment bridge supported by prestressed precast concrete piles on soft soils" Engineering Structures, 104, 18-31 (Corresponding author)
50. Kong, X.; **Cai**, C.S. *****; Kong B., (2015) "Damage Detection Based on Transmissibility of Vehicle and Bridge Coupled System", J. of Engineering Mechanics, ASCE, 141(1) 141(1), 04014102, DOI: 10.1061/(ASCE)EM.1943-7889.0000821, (Corresponding author)
51. Liu, Y., Peng, H., and **Cai, C.S.** (2015) "A Probabilistic model for the Flexural Capacity of Reinforced Concrete Structures Strengthened with Prestressed CFRP Plates"Advance in Structural Engineering, 18(5).
52. Liu, Y., Deng, Y., **Cai, C.S.** (2015)"Deflection monitoring and assessment for a suspension bridge using a connected pipe system: a case study in China," Structural Control and Health Monitoring, DOI: 10.1002/stc.175, 22:1408–1425
53. Liu, Z., Peng, H., **Cai, C. S. *** (2015)"Mesoscale Analysis of Stress Distribution along ITZs in Recycled Concrete with Variously Shaped Aggregates under Uniaxial Compression", Journal of Materials in Civil Engineering, ASCE, 04015024-1 to 10, DOI: 10.1061/(ASCE)MT.1943-5533.0001280. (Corresponding author)
54. Peng, H., Hao, H.X., Zhang, J.R., Liu, Y., **Cai, C. S.** (2015) "Experimental Investigation of the Bond Behavior of the Interface between Near-Surface-Mounted CFRP Strips and Concrete" Construction & Building Materials, 96, 11-19.
55. Xiong, Wen, **Cai, C.S.**, Kong, B., Kong, X. (2015)"CFD Simulations and Analyses for Bridge Scour Development Using Dynamic Mesh Updating Technique" Journal of Computing in Civil Engineering, ASCE, DOI: 10.1061/(ASCE)CP.1943-5487.0000458.
56. Xiong, W. , **Cai, C. S.**, Ye, Jianshu, and Ma, Ying (2015) "Analytical solution on highway U-shape bridges using isotropic plate theory," KSCE Journal of Civil Engineering, 19(6), 1852-1864, DOI: 10.1007/s12205-015-0610-y
57. Yang M.G., **Cai, C.S.,** Chen Y. (2015) "Creep performance of concrete-filled steel tubular (CFST) columns and applications to a CFST arch bridge" STEEL AND COMPOSITE STRUCTURES 19 (1), 111-129.
58. Yang M.G., **Cai, C.S.,** and Wei, B. (2015)"A Combined Control Strategy for Vibration Mitigations of a Suspension Bridge Induced by Vehicle Braking Force," Baltic Journal of Road and Bridge Engineering, 10(2), 118-125.

59. Yang, M.G. and **Cai, C.S.** (2015) "Longitudinal vibration control for a suspension bridge subjected to vehicle braking forces and earthquake excitations based on magnetorheological dampers." Journal of Vibration and Control doi:10.1177/1077546314564781.
60. Yu, Yang, **Cai, C.S. ***, and Deng, Lu (2015) "Vehicle axle identification using wavelet analysis of bridge global responses," J of Vibration and Control, 1-11, DOI: 10.1177/1077546315623147, (Corresponding author)
61. Zhang, Ye, **Cai, C. S. ***, and Kong, B. (2015)" A low frequency nonlinear energy harvester with large bandwidth utilizing magnet levitation" Smart Materials and Structures, **24** 045019 doi:10.1088/0964-1726/24/4/045019. (Corresponding author)

Wind and Hurricane Engineering

62. **Cai, C.S. ***, Jiexuan Hu, Suren Chen, Yan Han, Wei Zhang, Xuan Kong (2015)"A coupled wind-vehicle-bridge system and its applications: a review" Wind and Structures, 20(2) 117-142, DOI: http://dx.doi.org/10.12989/was.2015.20.2.117(Corresponding author)
63. Han, W.S., Ma, L., **Cai, C.S.**, Chen, S.R., and Wu, J. (2015) "Nonlinear Dynamic Performance of Long-Span Cable-stayed Bridge under Traffic and Wind" Wind and Structures, 20(2), 249-274, DOI: http://dx.doi.org/10.12989/was.2015.20.2.249
64. Yan Han, Shuqian Liu, **Cai, C.S. ***, Jianren Zhang, Suren Chen, Xuhui He (2015) "The influence of vehicles on the flutter stability of a cable-stayed bridge" Wind and Structures, 20(2), 275-292, DOI: http://dx.doi.org/10.12989/was.2015.20.2.275(Corresponding author)
65. Yan Han, Shuqian Liu, **Cai, C. S. ***, Chunguang Li (2015) "Flutter stability of a long-span suspension bridge during erection" Wind and Structures, *21(1), 41-61,* DOI: http://dx.doi.org/10.12989/was.2015.21.1.041 (Corresponding author)
66. Zhang, W., Ge, Y.J., **Cai, C.S.** (2015) "Application of Snapshot POD Analysis in Extracting Flow Structures around Bridge Decks". Advances in Structural Engineering, 18(6), 803-815.
67. Xu. G.J. and **Cai, C.S. *** (2015) "Wave Forces on Biloxi Bay Bridge Decks with Inclinations under Solitary Waves", Journal of Performance of Constructed Facilities, ASCE, http://dx.doi.org/10.1061/(ASCE)CF.1943-5509.0000644, 04014150. (Corresponding author)
68. Xu., G.J., **Cai, C.S. *** and Han, Y.(2015)" Investigating the Characteristics of the Solitary Wave Induced Forces on Coastal Twin Bridge Decks", Journal of Performance of Constructed Facilities, DOI: 10.1061/(ASCE)CF.1943-5509.0000821. (Corresponding author)
69. Xu. G.J. and **Cai, C.S. *** (2015) "Numerical simulations of lateral restraining stiffness effect on bridge deck -wave interaction under solitary waves." Engineering Structures, 101, 337-351. (Corresponding author)

2014(14)

Bridge and Structural Engineering

70. Hossain, T., Okeil, A., and **Cai, C.S.** (2014). "Field Test and Finite Element Modeling of a Three Span Continuous Girder Bridge." *J. Perform. Constr. Facil.*, ASCE, 10.1061/(ASCE)CF.1943-5509.0000401, 28(1), 136-148.
71. Hossain, T., Okeil, A., and **Cai, C.S.** (2014). "Calibrated Finite Element Modeling of Creep Behavior of Prestressed Concrete Bridge Girders,", ACI Structural Journal, 111(6),1287-1296.
72. Kong, B.; **Cai, C.S.**, Kong, X. (2014)" Thermal Property Analysis and Applications of GFRP Panels to Integral Abutment Bridges" Engineering Structures, 76, 1-9 (Corresponding author)

73. Kong, B.; **Cai**, C.S., Pan, F. (2014)" Thermal Field Distributions of Girder-Bridges with GFRP Panel Deck versus Concrete Deck" J. Bridge Enginerring, ASCE, 9(11), DOI: 10.1061/(ASCE)BE.1943-5592.0000617, (Corresponding author)
74. Nair, A., **Cai, C.S.,** Pan, F., and Kong, X. (2014). "Acoustic emission monitoring of damage progression in CFRP retrofitted RC beams." *Structural Monitoring and Maintenance, 1(1), 111-130*, DOI: http://dx.doi.org/10.12989/smm.2014.1.1.111 111. (Corresponding author)
75. Peng, H., Zhang, J.R., **Cai, C.S.**, Liu, Y. (2014) "An Experimental Study on Reinforced Concrete Beams Strengthened with Prestressed Near Surface Mounted CFRP Strips, Engineering Structture, 79, 222-233.

Vehicle and Bridge Dynamical Interaction

76. Zhang, Ye, **Cai, C.S.** and Deng, L. (2014) "Piezoelectric-based energy harvesting in bridge systems" *Journal of Intelligent Material Systems and Structures*, 25(12) 1414–1428, DOI: 10.1177/1045389X13507354 (Corresponding author)
77. Zhang, Ye, **Cai, C. S.**, and Zhang, W. (2014)"Experimental study of a multi-impact energy harvester under low frequency excitations" Smart Materials and Structres, **23** (5) 055002 (9pp) doi:10.1088/0964-1726/23/5/055002 (Corresponding author)

Wind and Hurricane Engineering

78. Han, Y., Liu, Shuqian, Hu, J.X., **Cai, C.S.**, Zhang, Jianren, Chen, Zhengqing (2014). "Experimental study on aerodynamic derivatives of a bridge cross-section under different traffic flows" J. of Wind and Industrial Aerodynamics, 133, 250-262. http://dx.doi.org/10.1016/j.jweia.2014.08.003(Corresponding author)
79. Han, Y., **Cai, C.S.**, Zhang, J.R., Chen, S.R., He, X.H. (2014) "Effects of aerodynamic parameters on the dynamic responses of road vehicles and bridges under cross winds, J of Wind Eng and Industrious Aerodynamics, 134, 78-95. (Corresponding author) DOI: 10.1016/j.jweia.2014.08.013.
80. Pan, F., **Cai, C. S.,** Zhang W. and Kong B.(2014) "Refined damage prediction of low-rise building envelope under high wind load", Wind and Structures, 18(6), 669-691, DOI: 10.12989/was.2014.18.6.669. (Corresponding author)
81. Xu, F. Y., **Cai, C. S.**, and Zhang, Z. (2014) "Investigations on coefficient of variation of extreme wind speed" Wind and Structures, 18(6), 633-650, DOI: 10.12989/was.2014.18.6.633.
82. Xu, F.Y., Li, B., **Cai, C. S.**, and Zhang, Z. (2014). "Experimental Investigations on Aerostatic Characteristics of Bridge Decks under Various Conditions." J. Bridge Eng., ASCE, 19(7), 04014024.
83. Zhang, W., **Cai, C.S.**, Pan, F., Zhang, Y. (2014)," Fatigue life estimation of existing bridges under vehicle and non- stationary hurricanewind" J. of Wind and Industrial Aerodynamics, 133(10), 135-145. http://dx.doi.org/10.1016/j.jweia.2014.06.008

2013(22)

Bridge and Structural Engineering

84. Kong, B., **Cai, C.S.** and Pan F. (2013)"Temperature distribution behaviors of GFRP honeycomb hollow section sandwich panels" *Structural Engineering and Mechanics, 47(5),623-641.* (Corresponding author)
85. Kong, B., **Cai, C.S.** and Kong, X. (2013)" Thermal behaviors of concrete and steel bridges after slab replacements with GFRP honeycomb sandwich panels". Engineering Structures, 56, 2041-2051. (Corresponding author)
86. Kong, X., **Cai, C. S.,** and Hou, S (2013) "Scour effect on a single pile and development of corresponding scour monitoring methods" Smart Mater. Struct. 22(5), 055011, doi:10.1088/0964-1726/22/5/055011(Corresponding author)
87. Okeil, A. M., Hossain, T., and **Cai, C.S.** (2013) "Field Monitoring of Positive Moment Continuity Detail In A Skewed Prestressed Concrete Bulb-T Girder Bridge," PCI Journal,58(2), 80-90.

88. Sun, B., **Cai, C.S.** and Xiao, Rucheng (2013) "Analysis Strategy and Parametric Study of Cable-Stayed-Suspension Bridges" *Advances in Structural Engineering*, 16(6), 1081-1102(Corresponding author)
89. Wang, Y.H. ; Nie, J.G., **Cai, C.S.** (2013) "Numerical modeling on concrete structures and steel-concrete composite frame structures" COMPOSITES PART B-ENGINEERING 51(Aug.)**,** 58-67**.**
90. Wu, Lili Jianguo Nie, Jianfeng Lu,Jiansheng Fan, **C.S. Cai** (2013)" A new type of steel–concrete composite channel girder and its preliminary experimental study", Journal of Constructional Steel Research, 85(6), 163-177.
91. Xiong, Wen, Wu, Qinglin and **Cai, C.S.** (2013) "Mechanical and Thermal Performance of Coextruded Wood Plastic Composites for Structural Applications" Advances in Structural Engineering,*16(5)*,909-929.
92. Xiong, Wen, Ye, J.S., Gai, X.M., and **Cai, C.S.**(2013) "Mechanical performance and design optimization of rib-stiffened super-wide bridge deck with twin box girders in concrete", Structural Engineering and Mechanics, 48(3), 395-414,**DOI:** 10.12989/sem.2013.48.3.395.
93. Zhang, J.R., Peng, H. and **Cai, C. S.** (2013)" Destructive Testing of a Decommissioned Reinforced Concrete Bridge," J of Bridge Engineering, ASCE, 18(6),564-569.

Vehicle and Bridge Dynamical Interaction

94. Liu, Yang, Xinfeng Yin, Jianren Zhang and **C.S. Cai** "Impact factors of an old bridge under moving vehicular loads" Structural Engineering and Mechanics, *An International Journal*, 46(3), 353-370. DOI: 10.12989/sem.2013.46.3.353
95. Yin, X.F., **Cai, C. S.**, Liu, Y., and Fang, Z. (2013)."Experimental and numerical studies of non-stationary random vibration for a high-pier bridge under vehicular loads", J. of Bridge Engineering, ASCE, 18(10), 1005-1020.
96. Zhang, W. and **Cai, C.S.** (2103)"Reliability Based Dynamic Amplification Factor on Stress Ranges for Fatigue Design of Existing Bridges" J. of Bridge Engineering, ASCE, 18(6), 538-552 (Corresponding author)
97. Zhang, W., **Cai, C.S.** and Fang Pan (2013)"Finite Element Modeling of Bridges with Equivalent Orthotropic Material Method for Multi-Scale Dynamic Loads" Engineering Structures, 54, 82-93. (Corresponding author)
98. Zhang, W., **Cai, C.S.** and Fang Pan (2013)"Nonlinear Fatigue Damage Assessment of Existing Bridges Considering Progressively Deteriorated Road Conditions" Engineering Structures, 56, 1922-1932 (Corresponding author)

Wind and Hurricane Engineering

99. **Cai, C. S.**, Zhang, *W.*, Liu, X.Z., Peng, W., Chen, S. R., Han, Y. and Hu, J. X. *(2013)* "Framework of wind–vehicle–bridge interaction analysis and its applications" Journal of Earthquake and Tsunami 7(3), 13500201-27 [27 pages] DOI: 10.1142/S1793431113500206(Corresponding author)
100. Han, Y. Hu, J.X., **Cai**, **C. S.,** Zhengqing Chen, Chunguang Li (2013)" Experimental and numerical studies of aerodynamic forces on vehicles and bridges" Wind and Structures, *17(2) 163-184.* (Corresponding author)
101. Hu, Peng, Li, Yongle, **Cai, C.S.**, Liao, Haili, and Xu, G.J.(2013) "Numerical simulation of the neutral equilibrium atmospheric boundary layer using the SST k-ω turbulence model" Wind and Structures, *17(1), 087-105.*
102. Li, Yongle, Hu, Peng, **Cai, C. S.**, Zhang, Mingjin, Qiang, Shizhong(2013) "Wind tunnel study of a sudden change of train wind loads due to wind shielding effects of bridge towers and passing trains" J of Engineering Mechanics, ASCE, 139(9), 1249-1259.
103. Pan, F., **Cai, C. S.**, and Zhang, W. (2103) "Wind-induced internal pressures of buildings with multiple openings" J of Engineering Mechanics, ASCE, 139(3), 376–385 (Corresponding author).

104. Zhang, W., Ge, Y.J. and **Cai, C. S.**(2013) "Evaluating Wind Loads on Bridge Decks Using Velocity Fields" J of Engineering Mechanics, ASCE, 139(3), 339–346.
105. Zhang, W. , **Cai, C. S.**, and Fang Pan (2013)"Fatigue Reliability Assessment for Long-Span Bridges under Combined Dynamic Loads from Winds and Vehicles" J. of Bridge Engineering, ASCE, 18(8), 735-747(Corresponding author)

2012(12)

Bridge and Structural Engineering

106. Nie, J.G., Wang; Y.H., and **Cai, C.S.** (2012) "Elastic Rigidity Analysis of Composite Beams with Full width Slab Openings" J. of Constructional Steel Research, 73, 43-57. (SCI)
107. Nie, J.G., Wang, Y.H., Fan, J.S., Zhang, X.G. and **C. S. Cai** (2012)"Mechanical behavior of composite joints for connecting existing concrete bridges and steel–concrete composite beams" J. of Constructional Steel Research, 75, 11-20. (SCI)
108. Xiong, W., **C.S. Cai**, Xiao, R.C. and, Deng, L.(2012)."Concept and Analysis of Stay Cables with a CFRP and Steel Composite Section" KSCE J. of Civil Engineering, 16(1), 107-117, DOI: 10.1007/s12205-012-1152-1. (SCI) (Corresponding author)
109. Xiong, W., **Cai, C. S.** and Kong, X. (2012). "Instrumentation Design for Bridge Scour Monitoring Using Fiber Bragg Grating Sensors" Applied Optics, 51(5), 547-557. (SCI) (Corresponding author)
110. Xiong, W., Tu, X., Xiao, R.C., and **Cai, C. S.** (2012)"A Stress-development Prediction Method and its Application to Stress Assessment of Existing Bridges" Engineering Structures, 38 ,113-122 DOI: 10.1016/j.engstruct.2012.01.008(SCI)
111. Xiong, W., **Cai, C. S.**, Xiao, R.C., and Zhang, Y. (2012) "Design Strategy of Hybrid Stay Cable System Using CFRP and Steel Materials" Steel and Composite Structures, 13(1), 47-70. (SCI)
112. Xiong, W. and **Cai, C. S.** "Development of Fiber Optic Acoustic Emission Sensors for applications in Civil Infrastructures" Advances in Structural Engineering, 15(8), 1471-1486 (Corresponding author). (SCI)
113. Zhang, Y.F.， Zhao, J.H. and **Cai, C. S.** (2012) "Seismic Behavior of Ring Beam Joints between Concrete-Filled Twin Steel Tubes Columns and Reinforced Concrete Beams" Engineering Structures, 39(6),1-10 (SCI) (Corresponding author)
114. Zhang, Y. and Cai, C.S. (2012). "A retrofitted energy harvester for low frequency vibrations" Smart Materials and Structures, 21 (2012) 075007, doi:10.1088/0964-1726/21/7/075007. (SCI) (Corresponding author)

Vehicle and Bridge Dynamical Interaction

115. Kong, X., Wu, D.J., **Cai, C.S.**, and Liu, Y.Q. (2012). "New Strategy of Substructure Method to Model Long-span Hybrid Cable-Stayed Bridges under Vehicle-induced Vibration," Engineering Structures 34 (1), 421–435. (SCI)
116. Zhang, W. and **C.S. Cai** (2012) "Fatigue Reliability Assessment for Existing Bridges Considering Vehicle Speed and Road Surface Conditions" J. of Bridge Engineering, ASCE. 17(3), 443-453 (SCI) (Corresponding author)

Wind and Hurricane Engineering

117. Xu, F.Y, Chen, X.Z, **Cai, C.S.**, Chen,A.R. (2012) "Determination of 18 Flutter Derivatives of Bridge Decks by an Improved Stochastic Search Algorithm" J of Bridge Engineering, ASCE, 17(4), 576–588. (SCI)

2011(13)

Bridge and Structural Engineering

118. Dong, J.H., **Cai, C.S.**, Okeil, A. (2011) "Overview of Potential and Existing Applications of Shape Memory Alloys in Bridges" Journal of Bridge Engineering, ASCE， 16(2), 305-315. (SCI) (Corresponding author)
119. He, J., Zhang, G. P., Hou, S., and **Cai, C.S.**, (2011) "Geopolymer-Based Smart Adhesives for Infrastructure Health Monitoring: Concept and Feasibility", J of Material in Civil Engineering, ASCE, 23(2), 100-109. (SCI)
120. Nie, J.G. Wang, Y.H. and **Cai, C.S.** (2011)"Experimental Research on Fatigue Behavior of RC Beams Strengthened with Steel Plate-Concrete Composite Technique", J. of Structural Engineering, ASCE, 137(7), 772-781. (SCI)
121. Nie, J.G., Tao, M.X., **C. S. Cai** and Chen. G. (2011) "Modeling and investigation of elasto-plastic behavior of steel-concrete composite frame systems" J. of Constructional Steel Research, 67**(**12), 1973-1984, doi**:** 10.1016/j.jcsr.2011.06.016 (SCI)
122. Nie, J.G., Tao, M.X., **C.S. Cai**, and Li, S. J. (2011) "Analytical and Numerical Modeling of Prestressed Continuous Steel-Concrete Composite Beams" Journal of Structural Engineering, ASCE, 137 **(**12), 1405-1418 (SCI).
123. Shen, G. H., **Cai, C. S.**, Sun, B. N., and Lou, W. J. (2011) "Study of Dynamic Impacts on Transmission-Line Systems attributable to Conductor Breakage Using the Finite Element Method" J. of Performance of Construction Facilities, ASCE , 25(2), 130-137. (SCI) (Corresponding author)
124. Xia, G.Y. and **Cai, C.S.**, (2011) "Equivalent stiffness method for nonlinear analysis of stay cables" Structural Engineering and Mechanics, 39**(**5), 661-667**.** (SCI) (Corresponding author)
125. Xiong, W., **Cai, C. S.,** Yin Zhang， and Xiao, R.C. (2011) "Study of super long span cable-stayed bridges with CFRP components" Engineering Structures, 33(2), 330-343. (SCI) (Corresponding author)
126. Zhang, J.R., Peng, H., and **Cai**, C.S. (2011) "Field Study of Overload Behavior of an Existing Reinforced Concrete Bridge under Simulated Vehicle Loads" Journal of Bridge Engineering, ASCE, 16(2), 226-237. (SCI)

Vehicle and Bridge Dynamical Interaction

127. Deng, L. and **Cai, C. S.** (2011) "Identification of Dynamic Vehicular Axle Loads: Demonstration by a Field Study" J. of Vibration and Control, 17(2) 183–195. (SCI) (Corresponding author)
128. Deng, L., **Cai, C.S.**, Babarto, M. (2011) "Reliability-Based Dynamic Load Allowance for Capacity Rating of Prestressed Concrete Girder Bridges" Journal of Bridge Engineering, ASCE, 16(6), 872-880. (SCI)
129. Yin X.F, **C.S.Cai**, Yang Liu. (2011) "Non-stationary random vibration of the bridge-vehicle coupled system." Advanced Materials Research, 243-249 ,1610-1613.
130. Yin, X.F, Fang, Z., and **Cai, C.S.** (2011) "Lateral Vibration of High-Pier Bridges under Moving Vehicular Loads" Journal of Bridge Engineering, ASCE, 16(3), 400-412. (SCI)

2010(9)

Bridge and Structural Engineering

131. Deng, Lu and **Cai, C. S.** (2010) "A Review of Bridge Scour: Prediction, Modeling, Monitoring, and Countermeasures" Practice Periodical on Structural Design and Construction, ASCE, 15(2), 125-134. (Corresponding author)
132. Nair, A. and **Cai, C. S.** (2010) "Acoustic Emission Monitoring of Bridges: Review And Case Studies" Engineering Structures, 32(6), 1704-1714. (SCI) (Corresponding author)
133. Wu, W.J. and **Cai, C. S.** (2010) "Cable Vibration Control with a Semiactive MR Damper - Numerical Simulation and Experimental Verification" Structural Engineering and Mechanics, *An International Journal*, 34(5), 611-623. (SCI) (Corresponding author)

134. Xiong, W., Xiao, R.C., Lu, D., and **Cai, C. S.** (2010)"Methodology of Long-Term Real-Time Condition Assessment for Exiting Cable-Stayed Bridges" Advances in Structural Engineering, An International Journal, 13(1), 111-125. (SCI) (Corresponding author)

Vehicle and Bridge Dynamical Interaction

135. Deng, L. and **Cai, C. S.** (2010) "Development of Dynamic Impact Factor for Performance Evaluation of Existing Multi-girder Concrete Bridges" Engineering Structures， 32(1), 21-31. (SCI) (Corresponding author)
136. Deng, Lu and **Cai, C. S.** (2010) Bridge Model Updating Using Response Surface Method and Genetic Algorithm," J. of Bridge Eng., ASCE, 15(5), 553-564. (SCI) (Corresponding author)
137. Deng, L. and **Cai, C. S.** (2010) "Identification of Dynamic Vehicular Axle Loads: Theory and Simulations," J. of Vibration and Control, 16(14): 2167–2194, 2010. (SCI) (Corresponding author)
138. Yin, X. F., **Cai, C. S.**, Fang, Z., and Deng, L. (2010) "Bridge vibration under vehicular loads - patch contact versus point contact" Journal of Structural Stability and Dynamics, 10(3), 529-554. (SCI) (Corresponding author)
139. Yin, X. F., Fang, Z., **Cai, C. S.**, and Deng, L. (2010)"Non-Stationary Random Vibration of Bridges under Vehicles with Variable Speed" Engineering Structures, 32(8) , 2166-2174. (SCI)

2009(13)

Bridge and Structural Engineering

140. **Cai, C.S.**, Oghumu, S. and Megers, D. (2009)."Finite Element Modeling and Development of Equivalent Properties for FRP Bridge Panels." Journal of Bridge Engineering, ASCE. 14(2), 112-121 (SCI) (Corresponding author)
141. **Cai, C. S.,** Chandolu. A., and Araujo, M. (2009) "Quantification of Intermediate Diaphragm Effects of Prestressed Concrete Girder Bridges on Load Distributions" PCI Journal, 54(2), 48-63. (SCI) (Corresponding author)
142. **Cai, C. S.**, Closure to discussion "Modeling of girder-deck system is questionable Response" PCI JOURNAL 54(4), 14-15(SCI) (Corresponding author)
143. Hou, S., **Cai, C. S.,** and Ou, J. P. (2009) "Seismic Damage Identification for Steel Structures Using Distributed Fiber Optics" Applied Optics, 48(22), 4483-4489.(SCI) (Corresponding author)
144. Nair, A. and **Cai, C.S.** (2009) "Damage detection of concrete structures using acoustic emission" Key Engineering Materials Vols. 400-402, 101-106, online at *http://www.scientific.net*(Corresponding author)
145. Nie, J.G., Qin, K. and **Cai, C.S.** (2009)"Seismic Behavior of Composite Connections - Flexural Capacity Analysis" Journal of Constructional Steel Research, 65(5), 1112-1120. (SCI) (Corresponding author)
146. Nie, J.G., Tang, L. and **Cai, C. S.** (2009)."Performance of Steel-Concrete Composite Beams under Combined Bending and Torsion" J. of Structural Engineering, ASCE, 135(9), 1048-1057. (SCI) (Corresponding author)
147. Nie, J. G., Tao, M. X., **Cai, C. S.**, and Li, S. J. (2009). "Deformation Analysis of Prestressed Continuous Steel–Concrete Composite Beams." J. of Structural Engineering, ASCE, 135(11), 1377 -1389. (SCI) (Corresponding author)
148. Wu, W.J. and **Cai, C. S.** (2009) "Comparison of Deck-anchored Damper and Clipped Tuned Mass Damper on cable vibration reduction." Structural Engineering and Mechanics, *An International Journal*, 32(6), 741-754. (SCI) (Corresponding author)

Vehicle and Bridge Dynamical Interaction

149. **Cai**, **C. S.,** Araujo, M., Nair, A., and Shi, X. (2009) "Static and Dynamic Performance Evaluation of a Prestressed Concrete Bridge Through Field Testing and Monitoring"

International Journal of Structural Stability and Dynamics, 9(4), 711-728. (SCI) (Corresponding author)

150. Deng, Lu and **Cai, C. S.** (2009) "Identification of Parameters of Vehicles Moving on Bridges" Engineering Structures, 31(10), 2474-2485.(SCI) (Corresponding author)
151. Shi, X. M., **Cai, C.** (2009) "Simulation of Dynamic Effects of Vehicles on Pavement Using A 3-D Interaction Model" J. of Transportation Eng., ASCE, 135(10), 736-744. (SCI) (Corresponding author)

Wind and Hurricane Engineering

152. Chen, S.R., **Cai, C.S.**, and Walshon, B. (2009). "From Normal Operation to Evacuation: Single-Vehicle Safety under Adverse Weather, Topographic and Operational Conditions" Natural Hazards Review, ASCE, 10(2), 68-76.

2008(10)

Bridge and Structural Engineering

153. Bai, Y., Nie, J.G., and **Cai, C.S.** (2008). "A New Connection System for Confined Concrete Colum and Beams - Part II: Theoretical Modeling" Journal of Structural Engineering, ASCE, 134(12), 1800-1809. (SCI) (Corresponding author)
154. Nie, J.G. Bai, Y. and **Cai, C.S.** (2008). "A New Connection System for Confined Concrete Colum and Beams - Part I: Experimental Study" Journal of Structural Engineering, ASCE, 134(12), 1787-1799. (SCI) (Corresponding author)
155. Nie, J.G., J. S. Fan, and **Cai, C.S.** (2008) "Experimental Study of Partially Shear Connected Composite Beams with Profiled Sheeting" Engineering Structures, 30(1), 1-12. (SCI) (Corresponding author)
156. Nie, J.G., Tian, C. Y., and **Cai, C.S.** (2008) "Effective Width of Steel-Concrete Composite Beam at Ultimate Strength State" Engineering Structures, 30(5), 1936-1407. (SCI) (Corresponding author)
157. Nie, J. G., Kai, Q. and **Cai, C.S.** (2008) "Seismic behavior of connections composed of CFSSTCs and steel–concrete composite beams—experimental study", Journal of Steel Construction Research, 64(10), 1178-1191.(SCI) (Corresponding author)
158. Nie, J. G., Kai, Q. and **Cai, C.S.** (2008) "Seismic behavior of connections composed of CFSSTCs and steel–concrete composite beams —finite element analysis", Journal of Steel Construction Research, 64(6), 680-688. (SCI) (Corresponding author)
159. Okeil, A.M. and **Cai, C.S.** (2008) "Survey of Short- and Medium-span Bridge Damage Induced by Hurricane Katrina"J. of Bridge Engineering, ASCE, 13(4), 377-386. (SCI)

Vehicle and Bridge Dynamical Interaction

160. Shi, X. M., **Cai, C. S.**, and Chen, S. R. (2008) "Vehicle Induced Dynamic Behavior of Short Span Bridges Considering Effect of Approach Span Condition" J. of Bridge Engineering, ASCE, 13(1), 83-92. (SCI) (Corresponding author)
161. Shi, X. M., **Cai, C. S.** (2008) "Suppression of Vehicle Induced Bridge Vibration Using Tuned Mass Damper" Journal of Vibration and Control, 14(7): 1037–1054. (SCI) (Corresponding author)

Wind and Hurricane Engineering

162. Chen, S.R., Chang, C.C., and **Cai, C. S.** (2008) "Study on Stability Improvement of Suspension Bridge with High-sided Vehicles under Wind using Tuned-Liquid-Damper" Journal of Vibration and Control, 14(5), 711-730. (SCI)

2007(15)

Bridge and Structural Engineering

163. **Cai, C. S.**, Araujo, M., Chandolu, A., Avent, R. R., and Alaywan, W. (2007) "Diaphragm effects of prestressed concrete girder bridges - a review and discussion" Practice Periodical on

Structural Design and Construction, ASCE, 12 (3), 161-167.(Top 3 Downloaded Articles) (Corresponding author)

164. **Cai, C. S.,** Wu, W.J. and Araujo, M. (2007) **"**Cable vibration control with a TMD-MR damper system: experimental exploration." J. of Structural Engineering, ASCE, 133(5), 629-637. (SCI) (Corresponding author)
165. **Cai, C. S**., Nie, J. G. and Shi, X. M. (2007) "Interface slip effect on bonded plate repairs of concrete beams." Engineering Structures, 29(6), 1084-1095. (SCI) (Corresponding author)
166. Cheng, J., Zhang, J., **Cai, C. S.,** and Xiao, R. C. (2007) "A new approach for solving inverse reliability problems with implicit response functions" Engineering Structures, 29(1), 71-79. (SCI)
167. Cheng, J., **Cai, C. S.,** and Xiao, R. C. (2007) "Probabilistic response analysis of cracked prestressed concrete beams" Advances in Structural Engineering, An International Journal, 10(1), 1-10. (SCI)
168. Cheng, J., **Cai, C. S.**, and Xiao, R. C. (2007) "Estimation of cable safety factors of suspension bridges using artificial neural network based inverse reliability method," International Journal for Numerical Methods in Engineering; 70(9), 1112–1133. (SCI)
169. Cheng, J., **Cai, C. S.**, and Xiao, R. C. (2007) "Application of artificial neural networks to the response prediction of geometrically nonlinear truss structures" Structural Engineering and Mechanics, *An International Journal* 26 (3), 251-262. (SCI)
170. Deng, Lu, and **Cai, C. S.** (2007) **"**Applications of fiber optic sensors in civil engineering" Structural Engineering and Mechanics, *An International Journal* 25(5), 577-596. (SCI) (Corresponding author)
171. Nie, J. G., **Cai, C. S.**, T. R. Zhou, and Y. Li (2007) "Experimental and analytical study of prestressed steel-concrete composite beams considering slip effect" J. of Structural Engineering, ASCE, 133(4), 530-540. (SCI) (Corresponding author)
172. Wu, W.J. and **Cai, C.S.** (2007) "Theoretical exploration of a taut cable and a TMD system" Engineering Structures, 29(6), 962-972. (SCI) (Corresponding author)
173. Yu, Z.W, Ding, F.X and **Cai, C. S.** (2007) "Experimental behavior of circular concrete-filled steel tube stub columns" Journal of Constructional Steel Research, 63(2), 165-174. (SCI) (Corresponding author)

Vehicle and Bridge Dynamical Interaction

174. **Cai, C. S.**, Shi, X. M., Araujo, M. and Chen, S. (2007) "Effect of Approach Span Condition on Vehicle-induced Dynamic Response of Slab-on-Girder Road Bridges." Engineering Structures, 29(12), 3210-3226. (SCI) (Corresponding author)
175. Zhang, Y. and **Cai, C. S.** (2007) "Load distribution and dynamic response of multi-girder bridges with FRP decks" Engineering Structures, 29(8), 1676-1689. (SCI) (Corresponding author)

Wind and Hurricane Engineering

176. Chen, S.R., **Cai, C. S.,** and M. Levitan (2007) **"**Understand and improve dynamic performance of transportation system – a case study of Luling Bridge" Engineering Structures, 29(6), 1043-1051. (SCI)
177. Chen, S.R. and **Cai, C. S.** (2007) "Equivalent wheel load approach for slender cable-stayed bridge fatigue assessment under traffic and wind: feasibility study" J. of Bridge Engineering, ASCE, 12(6) 755-764. (SCI) **(Received Collingwood Prize, ASCE).**

2006(7)

Bridge and Structural Engineering

178. **Cai, C.S.**, Wu, W.J. and Shi, X. M. (2006) "Cable vibration reduction with a Hung-on TMD System: I. Theoretical Study." J. of Vibration and Control, 12(7), 801-814. (SCI) (Corresponding author)

179. Nie, J. G., **Cai, C. S.**, Wu, H., and Fan, J. S. (2006) "Experimental and theoretical study of steel-concrete composite beams with openings in concrete flange" Engineering Structures, 28(7), 992-1000. (SCI) (Corresponding author)
180. Wu, W. J. and **Cai, C. S.** (2006) "Experimental study of magnetorheological dampers and application to cable vibration control." J. of Vibration and Control, 12(1), 67-82. (SCI) (Corresponding author)
181. Wu, W.J., **Cai, C. S.** (2006) **"**Cable vibration reduction with a Hung-on TMD System: II. parametrical study." J. of Vibration and Control, 12(8), 881-899. (SCI) (Corresponding author)

Vehicle and Bridge Dynamical Interaction

182. **Cai, C. S.** (2006) Closure to "Discussion on the AASHTO LRFD Load Distribution Factors for Slab-on-girder Bridges", Practice Periodical on Structural Design and Construction, ASCE, 11(4), 248. (Corresponding author)
183. Zhang, Y., **Cai, C. S.**, Shi, X. M. and Wang, C. (2006) "Vehicle induced dynamic performance of a FRP versus concrete slab bridge" J. of Bridge Engineering, ASCE, 11(4), 410-419. (SCI) (Corresponding author)

Wind and Hurricane Engineering

184. Chen, S.R., and **Cai, C. S.** (2006) **"**Unified approach to predict the dynamic performance of transportation system considering wind effects" Structural Engineering and Mechanics, An International Journal, 23(3), 279-292. (SCI)

2005(6)

Bridge and Structural Engineering

185. **Cai, C. S.** (2005) "Discussion on the AASHTO LRFD load distribution factors for slab-on-girder bridges", Practice Periodical on Structural Design and Construction, ASCE, 10(3), 171-176. (Corresponding author)
186. **Cai, C. S**., Shi, X. M., Voyiadjis, G. Z. and Zhang, Z. J. (2005) "Structural performance of bridge approach slab under given embankment settlement." J. of Bridge Engineering, ASCE, 10(4), 482-489. (SCI) (Corresponding author)
187. Cheng, J., **Cai, C. S.,** and Xiao, R. C. (2005) **"**Probabilistic shear-lag analysis of structures using systematic RSM." Structural Engineering and Mechanics, An International Journal, 21(5): 507-518. (SCI)
188. Nie, J. G., **Cai, C. S.**, and Wang, T. (2005) "Stiffness and capacity of steel-concrete composite beams with profiled sheeting." Engineering Structures, 27(7), 1074-1085. (SCI) (Corresponding author)
189. Shi, X. M., **Cai, C. S.**, Voyiadjis, G. Z., and Zhang, Z. J. (2005) "Design of ribbed concrete approach slab based on interaction with the embankment" Transportation Research Record, J. of the Transportation Research Board, National Research Council, 1936, 181-191. (SCI) (Corresponding author)

Wind and Hurricane Engineering

190. Cheng, J., **Cai, C. S.,** Xiao, R. C., and Chen, S. R.**,** (2005) **"**Flutter reliability analysis of suspension bridges." J. of Wind Engineering and Industrial Aerodynamics, 93(10), 757-775. (Top 25 Hottest Articles) (SCI)

2004(7)

Bridge and Structural Engineering

191. **Cai, C. S.**, and Shahawy, M. (2004) "Predicted and measured performance of prestressed concrete bridges", Journal of Bridge Engineering, ASCE, 9(1), 4-13. (SCI) (Corresponding author)

192. Nie, J. G., Fan, J. S., **Cai, C. S.** (2004) "Stiffness and deflection of steel-concrete composite beams under negative bending" J. of Structural Engrg., ASCE, 130(11), 1842-1851. (SCI) (Corresponding author)

Wind and Hurricane Engineering

193. **Cai, C. S.** and Chen, S. R. (2004) "Framework of vehicle-bridge-wind dynamic analysis ", Journal of Wind Engineering and Industrial Aerodynamics, 92 (7-8), 579-607. (SCI) (Corresponding author)
194. **Cai, C. S.**, Chen, S. R. (2004) "Wind vibration mitigation of long-span bridges in hurricanes", Journal of Sound and Vibration, 274 (1-2), 421-432. (SCI) (Corresponding author)
195. Chen, S. R. and **Cai, C. S.** (2004) "Coupled vibration control with tuned mass damper for long-span bridges ", Journal of Sound and Vibration, 278(1-2), 449-459. (SCI) (Corresponding author)
196. Chen, S. R. and **Cai, C. S.** (2004). "Accident assessment of vehicles on long-span bridges in windy environments" Journal of Wind Engineering and Industrial Aerodynamics, 92(12), 991-1024. (SCI) (Corresponding author)
197. Chen, S. R., **Cai, C. S.**, Chang, C. C. and Gu, M. (2004) "Modal coupling assessment and approximated prediction of coupled multimode wind vibration of long-span bridges", Journal of Wind Engineering and Industrial Aerodynamics, 92(5), 393-412. (SCI) (Corresponding author)

2003(5)

Bridge and Structural Engineering

198. **Cai, C. S.**, and Shahawy, M. (2003). "Understanding capacity rating of bridges from load tests." Practice Periodical on Structural Design and Construction, ASCE, 8(4), 209-216. (Corresponding author)
199. Nie, J. G. and **Cai, C. S.** (2003). "Steel-concrete composite beams considering shear slip effect." Journal of Structural Engineering, ASCE, 129(4), 495 – 506. (SCI) (Corresponding author)
200. Ondrej Kalny, Robert J. Peterman, Guillermo Ramirez, **Cai, C. S.** and Dave Meggers (2003) "Structural performance of fiber-reinforced polymer honeycomb sandwich panels: evaluation of size effect and wrap strengthening" In Transportation Research Record, J. of the Transportation Research Board, National Research Council, Washington D.C., NO. 1845, pp. 191-199. (TRB, Paper No. 03-3459). (SCI)

Wind and Hurricane Engineering

201. Chen, S. R. and **Cai, C. S.** (2003) "Evolution of long-span bridge response to wind-numerical simulation and discussion." Computers and Structures, 81(21), 2055-2066. (SCI) (Corresponding author)
202. Chen, S. R., **Cai, C. S.**, Gu, M., and Chang, C. C. (2003). "Optimal variables of TMDs for multi-mode buffeting control of long-span bridges" Wind and Structures, an International Journal, 6(5), 387-402. (SCI) (Corresponding author)

2002(3)

Bridge and Structural Engineering

203. **Cai, C. S.** (2002) "Three-dimensional strut-and-tie model for footing rehabilitation." Practice Periodical on Structural Design and Construction, ASCE, 7(1), 14-25. (Corresponding author)
204. **Cai, C. S.**, Shahawy, M., Peterman R. J. (2002) "Effect of diaphragms on load distribution in prestressed concrete bridges" In Transportation Research Record, J. of the Transportation Research Board, National Research Council, Washington D.C., No. 1814, pp. 47-54. (also presented at the 81th Annual Meeting, TRB, Paper No. 02-2246). (SCI) (Corresponding author)

205. Green, T. M., Yazdani, N., Spainhour, L., and **Cai, C. S.** (2002) "Intermediate diaphragm and temperature effects on concrete bridge performance" In Transportation Research Record, J. of the Transportation Research Board, National Research Council, Washington D.C., No. 1814, pp. 83-90. (SCI)

2001(3)

Bridge and Structural Engineering

206. **Cai, C. S.**, EL-Saad, A., and Shahawy, M. (2001) "Performance investigation of concrete manhole inlets." Practice Periodical on Structural Design and Construction, ASCE, 6(4), 166-175. (Corresponding author)
207. Green, T. M., Yazdani, N., Spainhour, L., and **Cai, C. S.** (2001) "Effect of bearing stiffness and skew angle on performance of precast concrete bridge." In Transportation Research Record, J. of the Transportation Research Board, National Research Council, Washington D.C., 1770, 27-33. (also presented at 80th Annual Meeting, TRB, Paper No. 01-2919). (SCI)
208. Shahawy, M., and **Cai, C. S.** (2001) "Enhancement of performance of prestressed concrete beams using Mechanical Anchorage." Journal of the Precast/Prestressed Concrete Institute, PCI, 46(5), 82-96. (SCI)

2000(3)

Bridge and Structural Engineering

209. Nie, J. G. and **Cai, C. S.** (2000) "Deflection of cracked RC beams under sustained loading." Journal of Structural Engineering, ASCE, 126(6), 708-716. (SCI) (Corresponding author)
210. Yazdani, N., Eddy, S. M., and **Cai, C. S.** (2000). "Validation of AASHTO bearing stiffness for standard precast concrete bridge girders" ACI, Structural Journal, 97(3), 436-443. (SCI)
211. Yazdani, N., Eddy, S., and **Cai, C. S.** (2000) "Effect of bearing pads on precast prestressed concrete bridges." Journal of Bridge Engineering, ASCE, 5(3), 224-232.

Wind and Hurricane Engineering

212. **Cai, C. S.**, and Albrecht, P. (2000) "Flutter derivatives based random parametric excitation aerodynamic analysis" Computers & Structures, 75(5), 463-477. (SCI) (Corresponding author)

1999 or earlier (6)

213. Shahawy, M., and **Cai, C. S.** (1999) "A new approach to shear design of prestressed concrete members." Journal of the Precast/Prestressed Concrete Institute, PCI, July-August, 44(4), 92-117. (SCI)
214. **Cai, C. S.**, Albrecht, P., and Bosch, H. R., (1999). "Flutter and buffeting analysis: finite element and RPE solution." Journal of Bridge Engineering, ASCE, 4(3), 174-180. (Corresponding author)
215. **Cai, C. S.**, Albrecht, P., and Bosch, H. R., (1999). "Flutter and buffeting analysis: Luling and Dear Isle bridges." Journal of Bridge Engineering, ASCE, 4(3), 181-188. (Corresponding author)
216. **Cai, C. S.** and Albrecht, P. (1999) "Discussion on Complex Notation in Flutter Analysis." Journal of Structural Engineering, ASCE, 125(10), 1199. (SCI). (Corresponding author)

217. **Cai, C. S.**, Zhang, Y., and Nie, J. G. (1998). "Composite girder design of cable-stayed bridges." Practice Periodical on Structural Design & Construction, ASCE, 3(4), 158 - 163. (Corresponding author)
218. **Cai, C. S.**, Liu, X. L., and Chen, W.F. (1991). "Further verifications of beam-column strength equations." Journal of Structural Engineering, ASCE, 117(2), 501-513. (SCI)