

CURRICULUM VITAE

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A. EDUCATION

Ph.D. Civil Engineering, University of Illinois, Urbana, Illinois, 1976

M.S. Civil Engineering, University of Illinois, Urbana, Illinois, 1973

B.S. Civil Engineering, Jadavpur University, Calcutta, India, 1968

B. EMPLOYMENT HISTORY

8/88-present Professor of Civil Engineering and Engineering Mechanics, University of Arizona
7/02-12/08 Director of Academic Programs, Department of Civil Engineering and Engineering Mechanics, University of Arizona, Tucson, Arizona
1/16-4/16 Visiting Professor, Indian Institute of Technology - Kanpur, India
3/09-5/09 Visiting Professor, Indian Institute of Science, Bangalore, India
1/09-3/09 Guest Professor, University of Tokyo, Japan
1/02 –2/02 & Visiting Professor, Academy of Sciences of the Czech Republic, Institute of
5/02-6/02 Theoretical and Applied Mechanics, Prague, Czech Republic, and Technical University of Ostrava, Czech Republic
2/02-3/02 Visiting Professor, Hong Kong University of Science & Technology, Kowloon, Hong Kong
7/95-12/95 Visiting Scholar, Norwegian Institute of Technology, University of Trondheim, Norway
7/85-8/88 Associate Professor, School of Civil Engineering, Georgia Inst. of Tech., Atlanta, GA
9/79-6/85 Assistant Professor, School of Civil Engineering, Georgia Inst. of Tech., Atlanta, GA
8/78-8/79 Assistant Professor of Civil Engineering, Illinois Institute of Technology, Chicago, IL
6/76-8/78 Staff Engineer, Bechtel Power Corporation, Norwalk, California
1/72-5/76 Teaching and Research Assistant, University of Illinois, Urbana, Illinois
4/72-11/72 Designer, Marco Steel Supply Co., Champaign, Illinois
5/70-1/72 Junior Engineer, Engineers India Ltd., New Delhi, India
6/68-4/70 Design Engineer, Paharpur-Marley Cooling Tower Engineers, Calcutta, India
5/67-7/67 Student Engineer, Kuljian Corporation, Calcutta, India

C. MAJOR AWARDS/RECOGNITIONS

C.1 Major Research Awards

- Institute Lecture, Indian Institute of Technology, Kanpur, India, 2016.
- Life Time Achievement Award, 2015 “in recognition of his Pioneering contributions in the area of Structural Reliability,” Society for Reliability and Safety.
- Inducted in to Teaching Excellence Award Wall, Georgia Institute of Technology, Atlanta, GA, 2014.
- Honorary Distinguished Visiting Professor, appointed by the Executive Council of the University, Bengal Engineering and Science University (second oldest Engineering Institute in India), Shibpur, India, 2013-2018.
- Invited Wenyuan Lecture Professorship, Tongji University, Shanghai, China, 2013.
- Elected Fellow of Structural Engineering Institute (SEI), ASCE, 2013.
- Elected Distinguished Member of ASCE, March, 2012 “For his exemplary - 44-year career as a world-class researcher, and his work as a peerless educator, mentor, and innovative practitioner, whose career includes the introduction of stochastic finite element method, a novel structural health assessment technique, an intelligent nonlinear seismic analysis technique, and an inspection-based maintenance strategy.”
- Excellent Contributions Award, 2011, International Association for Computer Methods and Advances in Geomechanics, “For introducing uncertainty concept in geotechnical engineering, integrating it with structural engineering, proposing stochastic mechanics-based algorithms to implement it for practical problems and publishing extensively.”
- Educator of the Year, 2011, AzSCE-SAB, AzSCE-YMF, ASPE, SAITE, SAME, SCE, SDA, WTS.
- Selected one of 23 Scientists and Technologists of Indian Origin abroad (STIOs) (may be the only engineer) by the Department of Science and Technology, Government of India, (similar to U.S. National Science Foundation) for collaborative projects with Indian scientists and technologists during 2009-2011.
- John C. Park Outstanding Civil Engineer Award, 2007, Arizona Society of ASCE, “for substantially contributing to the status of the civil engineering profession through distinguished service and outstanding achievement.”
- Hind Rattan (Jewel of India) Award, 2007, “for outstanding services, achievements and contributions” Nonresident Indian Welfare Society of India, New Delhi, India.
- da Vinci Award, 2005, recipient of the inaugural fellowship for distinguished and sustained record in the area of teaching, research and service to the department, college, university and profession, College of Engineering, University of Arizona. He was awarded \$5,000 for the fellowship.
- 2005 Distinguished Alumnus Award, Civil and Environmental Engineering Alumni Association, University of Illinois at Urbana-Champaign (considered to be one of the top three universities in Civil Engineering).
- Conference Award winner, 8th International Conference on Inspection, Appraisal, Repairs and Maintenance of Structures, Singapore, December 18-19, 2003.

- Honourable Diploma, the Czech Society for Mechanics, 2002, “recognizing the contributions to risk-based design, stochastic finite element method, in organizing Euro-SiBRAM 2002 International Colloquium and the educational activities in the Czech Republic.”
- Walter L. Huber Civil Engineering Research Prize, American Society of Civil Engineers, 1987, "for his research on risk-based design in civil engineering, innovatively blending probability theory with the concepts of structural, geotechnical, energy, and construction engineering to produce realistic, practical approaches to civil engineering problems."
- First Presidential Young Investigator Award, 1984. Jointly awarded by President Ronald Reagan and the National Science Foundation, “In recognition of ability and potential for contributing to the future vitality of the scientific and engineering effort of the nation." The award totaled \$500,000 over five years from the National Science Foundation.
- Invited by IUTAM (International Union of Theoretical and Applied Mechanics) several times to make technical presentations.
- Invited by - NATO - Advanced Study Institute to make a technical presentation.
- Sigma Xi Research Award, Sigma Xi Georgia Tech Chapter.
- Award of Merit, Bechtel Power Corporation.

C.2 Academic Honors

- Honorary Citation, Outstanding Graduate Student of the Department of Civil Engineering, by Professor C.P. Siess, Head, Department of Civil Engineering, University of Illinois, 1975.
- Honor Society of Phi Kappa Phi, University of Illinois, 1975.
- Outstanding Young Man of America, awarded by Outstanding Young Men of America, Washington, D.C., 1974.
- Government of India Merit Scholarship, 1963-1968 (five years award).
- University Gold Medal for standing First in Order of Merit in the Bachelor of Civil Engineering Examination, 1968.
- Jadavpur University Honor Award (awarded to those who maintain an exceptionally high level of scholastic achievement throughout their five years of study and are also of high moral character), 1968.
- Civil Engineering Department Gold Medal, Jadavpur University, 1968.

C.3 Major Teaching Awards

C.3.1 Undergraduate Teaching Awards

C.3.1.1 University of Arizona

- Arizona Engineering Education Fellow, 2012-13, College of Engineering, University of Arizona.
- Accolades Outstanding Faculty Award, 2011, Robert N. Shelton, President, University of

Arizona and Center for Student Involvement & Leadership.

- Award for Excellence at the Student Interface, College of Engineering, University of Arizona, 2015, 2014, 2013, 2011, 2010, 2008, 2007, 2005, and 2004, “in appreciation of your special efforts to serve our students well”. Most likely, it was initiated in 2004.
- Outstanding Faculty Member Award, 2014, 2013, 2011, 2008, 2006, 2004, 1991, graduating class, Department of Civil Engineering, University of Arizona.
- Accolades Nomination for Outstanding Faculty Award, 2010, University of Arizona.
- Five Star Faculty Award – Finalist, 2007, the Honors College, University of Arizona.
- Burlington North Foundation Faculty Achievement Award, 2000, University of Arizona. This award recognizes a faculty member who has demonstrated unusually significant and meritorious achievement in teaching and scholarship throughout his/her career at the University of Arizona. The Burlington North Foundation acknowledged the importance of this award by presenting the sum of \$2,900 to the recipient.
- Honorary Member of the Department of Civil Engineering and Mines, University of Sonora, Mexico, 2000.
- Professor of the Year Award, 1998, "For his outstanding performance in and out of the classroom, which has been paramount in our development scholastically as well as professionally," University of Arizona.

C.3.1.2 Georgia Institute of Technology

- Inducted in to Teaching Excellence Award Wall, Georgia Institute of Technology, Atlanta, GA, 2014.
- Outstanding Teacher Award, 1987, for being the best professor at Georgia Tech, selected by the Faculty Honors Committee, "in recognition of his excellence in teaching, inspiration to students, and intellectual integrity." The Amoco Foundation acknowledged the importance of this award by presenting the sum of \$1,500 to the recipient.
- Outstanding Civil Engineering Faculty Member Award, organized by the Georgia Tech student chapter of ASCE, 1982 and 1987, "in recognition of his service to the institution, to the science of engineering, and his dedication to the students."
- Received 100th percentile (highest) ratings in student evaluations several times.
- Honor Member of Chi Epsilon. It is a national award. Honor Membership is awarded to members of the Civil Engineering community who display excellence in the field of Civil Engineering.

C.3.1.3 Illinois Institute of Technology

- Received highest rating in student evaluations, published in the students’ newspaper, of the Armour College of Engineering staff, Illinois Institute of Technology, Fall semester of 1978 and Spring semester of 1979, the two semesters he taught there.

C.3.2 Graduate

Dr. Haldar supervised the maximum number of M.S. and Doctoral students in Structural Engineering in the CEEM department since his arrival in 1988. He supervised most of the M.S. students in structural engineering. If he is not the supervisor, he becomes a member of the final defense committee. For doctoral students, in most years he administered qualifying examination and gave two of the four parts examination. For doctoral students in Structural Engineering in the CEEM department, if he is not the supervisor, he becomes a member of the Doctoral Examination committee. He also served as a doctoral examination committee member for many Geotechnical Engineering and Hydraulic and Water Resources Engineering students in the CEEM department. Dr. Haldar was also a member of doctoral examination committee of numerous doctoral students in the Aerospace and Mechanical Engineering students.

C.3.3 Graduate Awards

- Graduate Advisor of the Year, 2004, Graduate and Professional Student Council, University of Arizona.
- Dr. Haldar advised a large number of domestic and international graduate students. Some of his former students are now very well established university professors in Canada, Korea, Mexico, Jordan, Taiwan, and U.S. Some of his other doctoral students are providing national leadership with Raytheon Corporation, Sikorsky Helicopter, and many other Civil Engineering design firms.

C.4 Major Recognitions for Professional Service

- Guest Editor, special issue on Prognostics & Structuring Health Management, SRESA's International Journal of Life Cycle Reliability and Safety Engineering, Vol. 4, Issue 1, Jan – March, 2015 and Issue 2, April – June, 2015.
- Founding Editor-in-Chief of “International Journal of Engineering under Uncertainty: Hazards, Assessment, and Mitigation”, New Delhi, India, 2008 – 2011.
- Organizer and Chair of Scientific committee, ISEUSAM-2012, International Symposium on Engineering under Uncertainty: Safety Assessment and Management, 2012.
- Honorable Recognition Award, 2006, Safety Engineering and Risk Analysis Division, American Society of Mechanical Engineers.
- Outstanding Faculty Award, 2001, The University of Arizona Asian American Faculty, Staff and Alumni Association, “In recognition of exemplary accomplishments of scholarship, teaching and contributions of service to the profession, the University of Arizona and to the community”.
- Structural Engineering Institute, American Society of Civil Engineers' Service Award, 2000, “in recognition of distinguished service to the Institute as Chair of the Structural Safety and Reliability Technical Administrative Committee”.
- Governor's Recognition Award, 1996, "Recognizing Quality, Excellence and Continuous Improvement in Arizona State Government", by Governor Fife Symington of the State of

Arizona.

- Invited Member, International Association for Structural Safety and Reliability.
- Invited member, International Association of Applications of Statistics and Probability in Civil Engineering (ICASP).
- Invited Member, American Academy of Mechanics.
- Editorial Board Member of numerous international journals.
- Organized, moderated, and chaired technical sessions in numerous international gatherings.
- Chair, International Scientific Committee and organized European-Simulation Based Reliability Assessment Method (Euro-SiBRAM'2002), Prague, Czech Republic.
- Member of International Scientific Committee, numerous international organizations.
- Associate Editor, Journal of the Structural Engineering, ASCE, 1992 - 1995.
- Program Chair, Safety Engineering and Risk Analysis Division (SERAD), American Society of Mechanical Engineering, 2005 – 2006.
- Organized and co-Chaired Probabilistic Mechanics Conference, ASCE, University of Notre Dame, 2000.
- Chair, Technical Administrative Committee on Structural Safety and Reliability, ASCE, responsible at the national level for committees on Safety of Buildings, Reliability of Offshore Structures, Safety of Bridges, and Fatigue and Fracture Reliability, 1995-1999.
- Chair or member of numerous ASCE-sponsored technical committees.
- Organized, moderated, and chaired technical sessions in numerous national gatherings.
- Organized ASCE's 150th anniversary celebration session, Past, Present, and Future of Reliability-Based Structural Design Worldwide, 2002.
- Technical Advisor, National Research Council, National Academy of Sciences, Washington, D.C., March 1992 to 1997.
- Fellow, American Society of Civil Engineers, 1990- present.
- Professional Engineer, State of Arizona, 1989 – present, State of California, 1978 – present, State of Illinois, 1979 - 1993 (currently inactive), and State of Georgia, 1980 - 1993 (currently inactive).
- Invited to make presentations at the Central Research Institute of Building and Construction, Ministry of Metallurgical Industry, Beijing, Qinghua University, Beijing, and Tongji University, Shanghai, jointly sponsored by the People's Republic of China and the National Science Foundation. (This was very significant at that time; before China opened to the outside world).

C5. Most Recent Major Research Grant

Haldar, A., “CDS&E - Theoretical Foundation and Computational Tools for Complex Nonlinear Stochastic Dynamical Engineering Systems – A New Paradigm,” National Science Foundation, 2014 – 2017.

D. Principal scholarly and professional achievements; Intellectual significance and impact on the University's mission and evidence of national and/or international recognition and leadership

Note: Dr. Haldar's research direction changed several times. To efficiently document the information, the List of Publications section is developed emphasizing his changes in research direction. After listing prestigious lectures and nontechnical award winning papers, the publication section is presented in three parts: (1) original basic research where his leadership is universally acclaimed, (2) academic research on miscellaneous areas of the highest quality and (3) basic research in collaboration with industries providing solutions to real, practical complex problems. To document the intellectual significance and impact on the University's mission and evidence of national and/or international recognition and leadership, each area is then developed by identifying major invited international presentations, followed by books, edited books, book chapters, referred and conference papers, as appropriate. Technical reports are listed next followed by other invited presentations on different topics not cited before.

E. LIST OF PUBLICATIONS

Summary: Books and Edited books – 10, book chapters – 24, refereed journal and conference papers – over 195, conference papers – over 130, reports with graduate students – over 85, invited international presentations – 48 (conference presentations excluded), invited national presentations – 20 (conference presentations excluded).

E.1 Ph.D. Thesis

Haldar, A., "Probabilistic Evaluation of Liquefaction Potential of Saturated Sand under Earthquake Loading," Ph.D. thesis, University of Illinois, Urbana, Illinois, 1976.

E.2 Prestigious lectures and nontechnical award winning papers

- Haldar, A., "Structural Health Monitoring: Past, Present and Future," **Keynote Lecture**, Engineering Mechanics Institute and Probabilistic Mechanics and Reliability Conference, ASCE, Vanderbilt University, Nashville, TN, May 25, 2016.
- Haldar, A., "Health Assessment of Civil Infrastructures," Institute Lecture, Indian Institute of Technology, Kanpur, India, April 7, 2016.
- Haldar, A., "Recent Trends & Challenges in Civil Engineering," **Keynote Lecture**, International Conference on Recent Trends & Challenges in Civil Engineering (RTCCE-2014), Paper ID: RTCCE-14/KN3, 8 pages, Motilal Nehru National Institute of Technology, Allahabad, India, December 12-14, 2014.
- Haldar, A., "Disaster Mitigation," **Special Plenary Lecture as the Guest of Honor**, International Conference on Disaster Mitigation, ICDM'14, Chennai, India, January 23,

2014.

- Haldar, A., “Time Domain Seismic Reliability Evaluation of Dynamic Systems Using a Hybrid Approach,” **Centenary Seminar**, Indian Institute of Science, Bangalore, India, May 5, 2009 (the most famous institute for Graduate Studies in India).
- Haldar, A., “Past, Present, and Future of Structural Engineering,” **50th Birthday Celebration Lecture**, University of Sonora, Mexico, September 8, 2008.
- Haldar, A., “Structural Engineering in The New Millennium: Opportunities and Challenges,” **150th Birthday Celebration Plenary Lecture**, Bengal Engineering and Science University, India, January 12, 2007 (may be the second oldest civil engineering department in the world).
- Haldar, A., And Mehrabian, A., “Structural Engineering In The New Millennium: Opportunities And Challenges,” *Structural Survey*, Vol. 26, No. 4, pp. 279-301, 2008. (Highly Commended Award Winner at the Literati Network Awards For Excellence 2009).
- Haldar, A., "The Night the Computer Stole the Engineer's Brain," *Civil Engineering Magazine*, ASCE, February, pp. 68-70, 1983 (Third Prize Winner in the 1982 ASCE Essay Contest).

E.3 Original Basic Research

E.3.1 Few Deterministic Analyses in Transformative Ways and Stochastic Finite Element Method (SFEM) (introduced the concept and developed it to its maturity including writing one-of-a-kind well accepted book, with the help of 11 doctoral students, numerous M.S. students, and several post-doctoral fellows)

E.3.1.1 Special Lectures with Technical Papers

- Haldar, A., “Engineering Computations of Large Infrastructures in the Presence of Uncertainty,” **Inaugural Keynote paper**, 6th International Workshop on Reliable Engineering Computing – Reliability and Computations of Infrastructures, Illinois Institute of Technology, Chicago, Ill, May 25-28, 2014, pp. 96-115, http://rec2014.iit.edu/documents/REC2014_Conference_Proceedings.pdf.
- Haldar, A., “Past, Present, and Future of Engineering under Uncertainty: Safety Assessment and Management,” **Inaugural Keynote paper**, International Symposium on Engineering under Uncertainty: Safety Assessment and Management, ISEUSAM-2012, Bengal Engineering and Science University, Howrah, India, January 4 to 6, 2012.
- Haldar, A., and Farag, R., “A Novel Reliability Evaluation Method for Large Dynamic Engineering Systems,” **Keynote Lecture**, International Conference on Reliability Safety and Hazard with the theme on Risk-based Technologies and Physics of Failure Methods (ICRESH-2010), Bhabha Atomic Research Center, Mumbai, India, pp. 21-31, December, 2010.

- Haldar, A., Farag, R., and Huh, J., “Reliability Evaluation of Large Structural Systems,” **Keynote Lecture**, International Symposium on Reliability Engineering and Risk Management (ISRERM2010), Shanghai, China, pp. 131-142, September, 2010.

E.3.1.2 Special Invited Presentations without Technical Paper (international)

- Haldar, A., “Fundamental concepts and advanced reliability methods for large complex dynamic Structures – Part 1,” Tongji University, Shanghai, China, August 15, 2013.
- Haldar, A., “Fundamental concepts and advanced reliability methods for large complex dynamic Structures – Part 2,” Tongji University, Shanghai, China, August 16, 2013.
- Haldar, A., “Reliability Analysis of Large Dynamic Systems,” Bengal Engineering and Science University, Howrah, India, January 4, 2011.
- Haldar, A., “A Novel Approach for Time Domain Seismic Reliability Evaluation,” Department of Earthquake Engineering, Indian Institute of Technology, Roorkee, January 12, 2010.
- Haldar, A., “Time Domain Structural Reliability Evaluation,” Bengal Engineering and Science University, Howrah, India, January 7, 2010.
- Haldar, A., “Time Domain Reliability Analysis in the Context of Nonlinear Earthquake Response Analysis,” Bhabha Atomic Research Center, Reactor Safety Division, Mumbai, India, May 7, 2009.
- Haldar, A., “Time Domain Seismic Reliability Evaluation – A Novel Approach,” Indian Institute of Technology - Chennai, India, April 17, 2009.
- Haldar, A. “Reliability Evaluation of Dynamic Systems in Time Domain using Nonlinear Finite Element Method”, University of Tokyo – Hongo campus, Tokyo, Japan, February 20, 2009.
- Haldar, A., “Nonlinear Seismic Reliability Evaluation in Time-Domain Using Stochastic Finite Element Method,” National Center for Research on Earthquake Engineering, Taipei, Taiwan, January 9, 2004.
- Haldar, A., “Seismic Reliability Evaluation of Large Nonlinear Dynamic Systems,” National Taiwan Ocean University, Keelung, Taiwan, January 12, 2004.
- Haldar, A., “Stochastic Nonlinear Dynamic Response of Large Systems,” Indian Institute of Technology, Kharagpur, India, January 5, 2004.
- Haldar, A., “Performance Based Design And Reliability Under Dynamic Loading,” The Hong Kong University of Science and Technology, Hong Kong, March 1, 2002.
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E.3.1.3 Books

- Haldar, A., and Mahadevan, S., *Reliability Assessment Using Stochastic Finite Element Analysis*, John Wiley & Sons, New York, NY, May, 2000.
- Haldar, A., and Mahadevan, S., *Probability, Reliability and Statistical Methods in Engineering Design*, John Wiley & Sons, New York, NY, January, 2000.
- Huh, J., Haldar, A., and Mahadevan, S., *Solutions Manual to Probability, Reliability and Statistical Methods in Engineering Design*, John Wiley & Sons, New York, NY, January,

2000.

E.3.1.4 Edited Books

- Haldar, A., editor, *Recent Developments in Reliability-Based Civil Engineering*, World Scientific Publishing Co., 2006.
- Haldar, A., Guran, A, and Ayyub, B.M., Co-Editors, *Uncertainty Modeling in Finite Element, Fatigue, and Stability of Systems*, World Scientific Publishing Co., 1997.

E.3.1.5 Book Chapters

- Haldar, A., *Structural Reliability Estimation for Seismic Loading*, Springer Reference, <http://www.springerreference.com/index/chapterdbid/382024>, 2015, DOI 10.1007/978-3-642-36197-5_277-1.
- Haldar, A., *Chapter 63 - Status and recent trends in reliability for civil engineering problems*, Status and New Trends in Performability Engineering, edited by K.B. Misra, Springer, U.K., pp. 1025-1046, 2008.
- Huh, J., and Haldar, A., *Chapter 9 - Dynamic Reliability Evaluation Using Finite Elements – Steel Structures*, Recent Developments in Reliability-Based Civil Engineering, edited by A. Haldar, World Scientific Publishing Co., pp. 165-186, 2006.
- Haldar, A., *Reliability Based Structural Design*, Principles of Structural Design, Edited by W.F. Chen and E.M. Lui, Taylor & Francis, FL, pp. 9-1 to 9-26, 2006.
- Haldar, A., *Reliability Based Structural Design*, Handbook of Structural Engineering, 2nd Edition, Edited by W.F. Chen and E.M. Lui, CRC Press, Boca Raton, FL., pp. 12-1 to 12-26, 2005.
- Huh, J., Haldar, A., and Lee, S.Y., *Chapter 19 - Reliability Evaluation of Realistic Structures using FEM*, Applied Research In Uncertainty Modeling And Analysis, Edited by N. O. Attoh-Okine and B.M. Ayyub, Springer Science Publishers, New York, pp. 417-442, 2005.
- Huh, J., and Haldar, A., *Chapter 24 - Reliability Assessment of an Unbraced Frame with Leaning Columns using Stochastic Finite Element Method*, Probabilistic Assessment of Structures using Monte Carlo Simulation, 2nd Edition, edited by Marek, P., J. Brozzetti, and M. Gustar, Academy of Sciences of the Czech Republic, Praha, Czech Republic, 2003.
- Haldar, A., and Gao, L., *Chapter 2 - Reliability Evaluation of Structures Using Nonlinear SFEM*, Uncertainty Modeling in Finite Element, Fatigue, and Stability of Systems, edited by A. Haldar, A. Guran and B.M. Ayyub, World Scientific Publishing Co., 1997, pp. 23-50.

E.3.1.6 Refereed papers

- Azizoltani, H., and Haldar, A., “Thermo-mechanical reliability estimation of lead-free solders in electronic packaging,” *Journal of Electronic Packaging*, (under review).
- Gaxiola-Camacho, J. R., Haldar, A., Azizoltani, H., Valenzuela-Beltran, F., and Reyes-Salazar, A., “Performance Based Seismic Design of Steel Structures Using Rigidities of Connections,” *ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part A: Civil Engineering*, (under review, 2017).
- Azizoltani, H., Gaxiola-Camacho, J. R., and Haldar, A., “Site-Specific Seismic Safety Assessment of Nonlinear Structural Systems,” *Earthquake Engineering and Structural Dynamics*, (under review, November, 2016).
- Azizoltani, H., and Haldar, A., “Intelligent Computational Schemes for Designing more Seismic Damage-Tolerant Structures,” *Journal of Earthquake Engineering* (under review, December, 2016).
- Gaxiola-Camacho, J. R., Azizoltani, H., Villegas-Mercado, F. J., and Haldar, A., “A Novel Reliability Technique for Implementation of Performance-Based Seismic Design of Structures,” *Engineering Structures*, Vol. 142, pp. 137-147, 2017, <http://doi.org/10.1016/j.engstruct.2017.03.076>.
- Farag, R., and Haldar, A., “A Novel Concept for Reliability Evaluation Using Multiple Deterministic Analyses,” *INAE Letters*, Vol. 1, Issue, pp. 85-97, 2016, DOI: 10.1007/s41403-016-0014-4.
- Farag, R., Haldar, A., and El-Meligy M., “Reliability Analysis of Piles in Multi-Layer Soil in Mooring Dolphin Structures,” *Offshore Mechanics and Arctic Engineering, ASME*, May 11, 2016. doi:10.1115/1.4033578.
- Farag, R., and Haldar, A., “A Novel Reliability Evaluation Method for Large Engineering Systems,” *Ain Shams Engineering Journal*, Vol. 7, No. 2, pp. 613-625, <https://doi.org/10.1016/j.asej.2016.01.007>, 2016.
- Haldar, A., “Reliable Engineering Computations of Large Infrastructures,” *International Journal of Reliability and Safety*, Paper No. IJRS-94209, Vol. 9, Nos. 2/3, pp. 92-111, 2015.
- Le, T. S., Huh, J., Ahn, J-H., and Haldar, A., “Damage State Identification and Seismic Fragility Evaluation of the Underground Tunnels,” *Applied Mechanics and Materials*, Vol. 775 (2015), pp. 274-278, doi:10.4028/www.scientific.net/AMM.775.274.
- El-Bordany R., El-Meligy M., and Haldar, A., “An Improved Reliability Analysis Method Mooring Dolphin Structures,” *Offshore Mechanics and Arctic Engineering, ASME*, Vol. 136 / 034501-1-034501-05, 2014.
- Haldar, A., “Past, Present, and Future of Engineering under Uncertainty: Safety Assessment and Management,” *Society for Reliability and Safety’s International Journal of Life Cycle Reliability and Safety Engineering*, Vol. 1, No. 4, pp. 39-52, 2012.
- Huh, J., Haldar, A., and Yim, S., “Effect of Uncertainty in the Frequency Content and Strong Motion Duration on the Structural Seismic Risks,” *International Journal of Ocean Engineering System*, Vol. 2, No. 1, pp. 25-37, 2012, <http://dx.doi.org/10.5574/IJOSE.2012.2.1.025>.
- Haldar, A., Farag, R., and Huh, J., “A Novel Concept for the Reliability Evaluation of Large Systems,” *Advances in Structural Engineering – An International Journal*, Vol. 15, No. 11, pp. 1879-1892, 2012.

- Huh, J., And Haldar, A., “A Novel Risk Assessment Method for Complex Structural Systems,” *IEEE Transactions on Reliability*, Vol. 60, No. 1, pp. 210-218, March, 2011.
- Haldar, A., Huh, J., and Mehrabian, A., “Time-Domain Seismic Reliability of Nonlinear structures,” *Sadhana*, Academy Proceedings in Engineering Sciences, Special Issue on Probabilistic Structural Dynamics and Earthquake Engineering, Vol. 31, Part 4, pp. 359-382, August, 2006.
- Haldar, A., Huh, J., and Mehrabian, A., “Reliability Evaluation Using Finite Element Method,” Paper No. IMECE 2006-13796, American Society of Mechanical Engineering, 2006.
- Huh, J., and Haldar, A., “FEM-based Seismic Reliability Analysis of Real Structural System,” *Journal of the Computational Structural Engineering Institute of Korea*, Vol. 19, No. 2, pp. 171~185, 2006.
- Huh, J., and Haldar, A., “A Time-Domain Reliability Assessment Technique for nonlinear Structures,” *Advances in Stochastic Structural Dynamics*, Proceedings of the 5th International Conference on Stochastic Structural Dynamics – SSD03, Edited by W.Q. Zhu, G.Q. Cai, and R.C. Zhang, CRC Press, Boca Raton, Florida, pp. 231-238, 2003.
- Lee, S. Y., and Haldar, A., “Reliability Analysis of Frame and Shear Wall Structural Systems – Static Loading,” *Journal of the Structural Engineering, ASCE*, Vol. 129, No. 2, pp. 224-232, February, 2003.
- Lee, S. Y., and Haldar, A., “Reliability Analysis of Frame and Shear Wall Structural Systems – Dynamic Loading,” *Journal of the Structural Engineering, ASCE*, Vol. 129, No. 2, pp. 233-240, February, 2003.
- Huh, J., and Haldar, A., “Uncertainty in Seismic Analysis and Design”, *Journal of Structural Engineering, Special issue on Advances in Engineering of Structures to Mitigate Damage due to Earthquakes*, Vol. 29, No. 1, pp. 1-7, April-June, 2002.
- Huh, J., and Haldar, A., “Seismic Reliability of Nonlinear Frames with PR connections using Systematic RSM,” *Probabilistic Engineering Mechanics*, Vol. 17, No. 2, pp. 177-190, 2002.
- Huh, J., Haldar, A., and Cho, H-M., “Seismic Risk Analysis of Frames with Uncertain Support and PR Connection Conditions,” *KSCE Journal of Civil Engineers*, Vol. 5, No. 4, pp. 329-338, December, 2001.
- Huh, J., and Haldar, A., “Stochastic Finite Element-Based Seismic Risk Evaluation for Nonlinear Structures,” *Journal of the Structural Engineering, ASCE*, Vol. 127, No. 3, pp. 323-329, 2001.
- Haldar, A., and Huh, J., "Reliability Analysis of Structures Subjected to Dynamic Loadings Using Nonlinear SFEM," *International Union of Theoretical and Applied Mechanics (IUTAM), Nonlinearity and Stochastic Structural Dynamics*, Editors: S. Narayanan and R.N. Iyengar, Kluwer Academic Publishers, pp. 95-106, 2001.
- Huh, J., Haldar, A., and Seo, S-G., "SFEM-Based Reliability Analysis of Frames with Uncertain Support and Connection Conditions," *KSCE Journal of Civil Engineers*, Vol. 3, No. 1, pp. 27-36, 1999.
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E.3.1.7 Refereed conference papers (ICOSSAR & ICASP are the two most prestigious international organizations for the community of stochastic mechanics and structural reliability. Each organizes international gathering every four years. All published papers are reviewed by at least two peers.)

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E.3.1.8 Conference papers

- Azizzoltani, H., Sen, N., and Haldar, A., “Reliability Evaluation of Large Nonlinear Structures Excited by Dynamic Loadings Applied in Time Domain,” EMI/PMC 2016, ASCE, Vanderbilt University, May 22 -25, 2016, Paper No. 184.

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- Haldar, A., and Farag, R., “Reliability Evaluation of Laterally Loaded Deep Foundation,” Fifth Asian-Pacific Symposium on Structural Reliability and its Applications (5APSSRA), Wilson Tang’s Memorial Lecture, Singapore, 23-25 May 2012.
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- Farag, R., El-Meligy, M., and Haldar, A., “Analysis of Lateral Spread-induced Pile Failure: Case Study,” American Society of Civil Engineer, 6th International Engineering and Construction, Conference (IECC’6), Cairo, Egypt, June 28-30, 2010.
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- Zhou, Y., and Haldar, A., "Stochastic Finite Element Analysis of Partially Restrained Nonlinear Structures," *XI U.S. National Congress of Applied Mechanics*, University of Arizona, Tucson, Arizona, May 21-25, 1990.
- Haldar, A., "An Efficient Algorithm for Nonlinear Post-Buckling Analysis of Structures," *Proc., 1990 Annual Technical Session, Structural Stability Research Council*, pp. 313-324, St. Louis, Missouri, April 9-11, 1990.
- Mahadevan, S., and Haldar, A., "An Efficient Technique for Applied Stochastic Finite Element Analysis," *Twelfth Canadian Congress of Applied Mechanics*, Ottawa, Canada, Vol. 2, pp. 852-853, May 28 - June 2, 1989.
- Haldar, A., and Nee, K-M., "Elasto-Plastic Dynamic Analysis of Frames with Semi-Rigid Connections," *Twelfth Canadian Congress of Applied Mechanics*, Ottawa, Canada, Vol. 1, pp. 390-391, May 28 - June 2, 1989.
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- Mahadevan, S., and Haldar, A., "Stochastic Finite Element Analysis of Frames with Flexible Connections," *Specialty Conference on Probabilistic Mechanics and Structural and Geotechnical Safety*, ASCE, Virginia Polytechnic Institute and State University, Blacksburg, Virginia, pp. 169-172, May 25-27, 1988.
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- Haldar, A., and Nee, K-M., "An Efficient Computer Algorithm for LRFD for 3-D PR Steel Frames," *National Engineering Conference*, American Institute of Steel Construction, Miami, Florida, June 8-11, 1988, Poster Paper.
- Mahadevan, S., and Haldar, A., "A Probabilistic Design of Steel Frames," *National Engineering Conference*, American Institute of Steel Construction, Miami, Florida, June 8-11, 1988, Poster Paper.
- Haldar, A., and Mahadevan, S., "A Design-Oriented Stochastic Finite Element Method," *Ninth International Conference on Structural Mechanics in Reactor Technology (SMiRT)*, Lausanne, Switzerland, August 17-21, Vol. M, pp. 307-312, 1987.

E.3.2 Structural Health Assessment (Initiated Interdisciplinary Research Area with the help of 7 doctoral students and several M.S. students and several post-doctoral

fellows. His related papers are referred more by Electrical Engineers than by Civil Engineers, indicating its cross-disciplinary nature.)

E.3.2.1 Special Lectures with Technical Papers

- Haldar, A., and Al-Hussein, A., “Prognostics and Structuring Health Assessment Using Uncertain Measured Response Information,” **Keynote Paper**, International Conference on Reliability, Safety, and Hazard (ICRESH) and Advances in Reliability, Maintenance, and Safety (ARMS), Lulea University of Technology, Lulea, Sweden, June 1 - 4, 2015.
- Haldar, A., and Al-Hussein, A., “Structural Health Assessment: Challenges,” **Inaugural Keynote Paper**, International Conference on Disaster Mitigation, ICDM’14, Chennai, India, pp. K7-1 to K7-10, January 23-24, 2014.
- Haldar, A., and Das, A.K., “Health Assessment of Structures – Past, Present, and Future,” **Invited paper**, International Symposium on Engineering under Uncertainty: Safety Assessment and Management, ISEUSAM-2012, Bengal Engineering and Science University, Howrah, India, January 4 to 6, 2012.
- Haldar, A., Structural Health Assessment using Noise-contaminated Minimum Dynamic Response Information, **Invited Lecture**, International Workshop on Frontier Technologies for Infrastructure Engineering, National Taiwan University of Science and Technology, Taipei, Taiwan, pp. 361-382, 2008.

E.3.2.2 Special Invited Presentations without Technical Paper (international)

- Haldar, A., “Health Assessment of Civil Infrastructures,” Institute Lecture, Indian Institute of Technology, Kanpur, India, April 7, 2016.
- Haldar, A., “Structural Health Assessment – Myths, Challenges, and Solution Strategies,” Global Initiative for Academic Network (GIAN), Indian Institute of Technology, Kanpur, March 3, 2016.
- Haldar, A., “Structural Health Assessment – A Novel Approach,” McGill University, Montreal, Canada, October 19, 2012.
- Haldar, A., “Structural Health Assessment using Noise-Contaminated Dynamic Response Information – A Progress Report,” Dept. of Civil Engineering & Engineering Mechanics, University of Arizona, Tucson, AZ, August 31, 2012.
- Haldar, A., “A Novel Structural Health Assessment Technique using Minimum Noise-Contaminated Dynamic Response Information,” Department of Earthquake Engineering, Indian Institute of Technology, Roorkee, January 11, 2010.
- Haldar, A., “Recent Development in Structural Health Monitoring in Civil Engineering Applications,” Jadavpur University, Calcutta, India, January 9, 2010.
- Haldar, A., “Health Monitoring of Structures,” Bhabha Atomic Research Center, Reactor Safety Division, Mumbai, India, May 8, 2009.
- Haldar, A., “Structural Health Assessment using Minimum Noise-Contaminated Dynamic Response Information – A Novel Approach,” Thapar University, Patiala, India, April 28, 2009.

- Haldar, A., “Structural Health Assessment using Minimum Noise-Contaminated Dynamic Response Information,” Structural Engineering Research Center, Chennai, India, April 17, 2009.
- Haldar, A., “Is The Inverse Problem Technique Appropriate for Structural Health Assessment?” Indian Institute of Science, Bangalore, India, April 9, 2009.
- Haldar, A. “Structural Health Assessment using Uncertainty-Filled Minimum Dynamic Response Information,” Indian Institute of Technology - Delhi, India, March 20, 2009.
- Haldar, A. “Structural Health Assessment using Noise-Contaminated Minimum Dynamic Responses,” Musashi Institute of Technology, Tokyo, Japan, February 17, 2009.
- Haldar, A., “A Novel Structural Health Assessment Technique with Minimum Information under Uncertainty,” South China University of Technology, Guangzhou, P.R. of China, May 21, 2007.
- Haldar, A., “A Novel Structural Health Assessment Technique under Uncertainty,” Southeast University, Nanjing, P. R. of China, May 28, 2007.
- Haldar, A., “A Novel Structural Health Assessment Technique,” Nanjing University of Technology, Nanjing, P. R. of China, May 29, 2007.
- Haldar, A., “Structural Health Assessment with Minimum Information under Uncertainty – A Novel Approach,” National University of Singapore, Singapore, January 6, 2006.
- Haldar, A., “Structural health assessment with minimum information,” Nanyang Technological University, Singapore, January 4, 2006.
- Haldar, A., “Structural Health Assessment under Uncertainty – A Novel Approach,” Bengal Engineering and Science University, Shibpur, Howrah, India, December 22, 2005.
- Haldar, A., “Post-Earthquake Structural Health Assessment” Indian Institute of Technology, Kanpur, December 19, 2005.
- Haldar, A., “Post-Disastrous Evaluation of Structures,” Autonoma University of Sinaloa, Mexico, September 23, 2005.
- Haldar, A., “Structural Damage Assessment,” University of Sonora, Mexico, November 11, 2004.
- Haldar, A., “Health Monitoring of Existing Structures,” The Hong Kong Polytechnic University, Hong Kong, February 25, 2002.
- Haldar, A., “Nondestructive Inspections and Reliability Updating for Fatigue Damage Evaluation,” The Hong Kong University of Science and Technology, Hong Kong, February 22, 2002.
- Haldar, A., “In-service Health Monitoring of Existing Structures,” The Hong Kong University of Science and Technology, Hong Kong, February 7, 2002.

E.3.2.3 Edited Books

- Haldar, A., editor, *Health Assessment of Engineered Structures: Bridges, Buildings and Other Infrastructures*, World Scientific Publishing Co., 2013.

E.3.2.4 Book Chapters

- Haldar, A., and Al-Hussein, A., “*Prognostics and Structural Health Assessment Using Uncertain Measured Response Information,*” Current Trends in Reliability, Availability, Maintainability and Safety, Edited by U. Kumar, A. Ahmadi, A. K. Verma, and P. Varde, Springer International Publishing, pp. 165-186, 2016.
- Das, A.K., and Haldar, A., Chapter 6 – A Novel Health Assessment Method for Large Three Dimensional Structures, Health Assessment of Engineered Structures: Bridges, Buildings and Other Infrastructures, World Scientific Publishing Co., pp. 149-178, 2013.
- Haldar, A., and Das, A. K., *Structural Health Assessment Using Extended Kalman Filter*, Advances in Mathematics Research, Volume 16, pp. 397-442, Nova Science Publishers, Inc., New York, N.Y., November, 2012, ISBN 978-1-61324-928-4.
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E.3.2.5 Refereed papers

- Al-Hussein, A., and Haldar, A., “Complexities in Assessing Structural Health of Civil Infrastructures,” *Journal of Complexity*, (under review).
- Al-Hussein, A., and Haldar, A., “Nonlinear System Identification from Noisy Measurements,” *International Journal of Structural Engineering (IJSTRUCTE)*, (under review).
- Al-Hussein, A., and Haldar, A., “Structural Damage Prognosis of Three-Dimensional Large Structural Systems,” *Structure and Infrastructure Engineering*, <http://dx.doi.org/10.1080/15732479.2017.1304430>.
- Al-Hussein, A., and Haldar, A., “Structural Health Assessment using Extended and Unscented Kalman Filters,” Special Issue on “Data Acquisition and Processing, Uncertainty Management and Inverse Problem Techniques for Structural Health Monitoring Applications,” *International Journal of Sustainable Materials and Structural Systems*, Vol. 2, Nos. 1/2, pp. 52-76, 2015.
- Al-Hussein, A., and Haldar, A., Computational Intelligence for Structural Identifications,” 2015 IEEE Symposium Series on Computational Intelligence (IEEE

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- Al-Hussein, A., and Haldar, A., “Structural Health Assessment at a Local Level Using Minimum Information,” *Engineering Structures*, Vol. 88, pp. 100-110, 2015.
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- Haldar, A., and Das, A. K., “Prognosis of Structural Health – Nondestructive Methods,” Special Issue on Prognostics and Health Management (PHM), *International Journal of Performability Engineering*, Vol. 6, No. 5, pp. 487-498, 2010.
- Haldar, A., “Is the Inverse Problem Technique Appropriate for Structural Health Assessment?” *Current Science*, Vol. 97, No. 8, pp. 1187-1195, 2009.
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- Katkhuda, H., and Haldar, A., “A Novel Health Assessment Technique with Minimum Information,” *Structural Control and Health Monitoring*, Vol. 15, No. 6, pp. 821-838, 2008.
- Haldar, A., and Martinez-Flores, R., “A Novel Methodology for Assessment of Safety of Existing Structures”, *Journal of Structural Engineering*, Vol. 35, No. 1, pp. 82-91, 2008.
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- Vo, P. H., and Haldar, A., “Health Assessment of Beams – Theoretical Formulation and Analytical Verification,” *Structure and Infrastructure Engineering*, Vol. 4, No. 1, pp. 33-44, February, 2008.
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- Chakraborty, S., and Haldar, A., "Robust Optimization under Uncertainty," 3rd International Conference on Reliability, Safety and Hazard, Mumbai, India, December 1 - 3, 2005.
- Reyes-Salazar, A., Juárez-Duarte, J.A., López-Barraza, A., and Haldar, A., "Combination Rules For The Effects Of The Horizontal Components Of Earthquakes: A Critical Evaluation," 13th World Conference on Earthquake Engineering, Vancouver, British Columbia, Canada, August 1 – 6, 2004, Paper No. 19, (CD-ROM).
- Haldar, A., Feng, M. Q., and Aktan, A.E., "Issues on Performance-Based Engineering for Buildings and Bridges," ASCE Structures Congress, Nashville, Tennessee, May 22 to 26, 2004, (CD-ROM).
- Phoon, K.K., Marek, P., Haldar, A., and Gustar, M., "A Report on Euro-SiBRAM'2002 Colloquium," 8th International Conference on Inspection, Appraisal, Repairs and Maintenance of Structures, Singapore, December 18-19, 2003. (Conference Award winner).
- Haldar, A., and Aktan, A.E., "Definitions, Quantitative Indices and Tools for Measuring Performance of Constructed Systems," ASCE Structures Congress, Seattle, Washington, May 29 to June 1, 2003.
- Haldar, A., "Basic Simulation Concepts Applicable in Codified Design," Euro-SiBRAM'2002 Prague, June 24-26, Czech Republic, 2002 (CD-ROM).
- Reyes-Salazar, A., and Haldar, A., "Consideration of Vertical Acceleration and Flexibility of Connections on Seismic Response of Steel Frames," 12th World Conference on Earthquake Engineering, Auckland, New Zealand, January 30 – February 4, 2000, Paper No. 1171, (CD-ROM).
- Haldar, A., and Reyes-Salazar, A., "Dissipation of Energy in Steel Frames under Dynamic Loading," 12th World Conference on Earthquake Engineering, Auckland, New Zealand, January 30 – February 4, 2000, Paper No. 458, (CD-ROM).
- Haldar, A., and Reyes, A. S., "Ductility Evaluation of Steel Frames with PR Connections," Eleventh World Conference on Earthquake Engineering, Acapulco, Mexico, June 23-28, 1996.
- Hadjian, A.H., and Haldar, A., "Performance Level Basis for Seismic Design," Fifth U.S. National Conference on Earthquake Engineering, Chicago, Illinois, July 10-14, 1994.
- Haldar, A., and Reddy, R. K., "Safety Evaluation by System Identification and Fuzzy Analysis," NAFIPS'90 (North American Fuzzy Information Processing Society) Conference, Vol. II, pp. 370-373, University of Toronto, Toronto, Canada, June 7-8, 1990.
- Haldar, A., and Reddy, R.K., "Entropy-Based Subjective Modification," First International Symposium on Uncertainty Modeling and Analysis, pp. 658-663, University of Maryland, College Park, Maryland, December 3-5, 1990.
- Reddy, R.K., and Haldar, A., "A Random-Fuzzy Reliability Analysis," First International

Symposium on Uncertainty Modeling and Analysis, pp. 161-166, University of Maryland, College Park, Maryland, December 3-5, 1990.

- Haldar, A., and Mahadevan, S., "A Procedure for Stochastic Structural Optimization," *Engineering Mechanics Division Specialty Conference*, ASCE, Virginia Polytechnic Institute and State University, Blacksburg, Virginia, pp. 133, May 23-25, 1988.
- Haldar, A., "Propagation of Uncertainties in Along Wind Response Analysis," *ASCE-EMD Specialty Conference*, State University of New York at Buffalo, Buffalo, New York, pp. 62, May 1987.
- Kanegaonkar, H.B., and Haldar, A., "Dynamics of an Offshore Guyed Tower Under Random Wave Loading," *ASCE-EMD Specialty Conference*, State University of New York at Buffalo, Buffalo, New York, pp. 28, May 1987.
- Kanegaonkar, H.B., and Haldar, A., "A Markovian Approach to Compliant Offshore Platforms," *Marine Structural Reliability Symposium*, Arlington, Virginia, pp. 115-124, October 5-6, 1987.
- Haldar, A., and Kanegaonkar, H.B., "Probabilistic Nonlinear Dynamics of Deep Water Compliant Platforms," *Offshore Technology Conference*, OTC 5413, Houston, Texas, pp. 461-468, April 1987.
- Kanegaonkar, H.B., and Haldar, A., "A Response Computation Technique for Offshore Platforms Subjected to a Class of Non-Normal Stochastic Loading," *Fourth International Symposium on Numerical Methods in Engineering*, Atlanta, Georgia, pp. 607-612, March 24-28, 1986.
- Haldar, A., and Kanegaonkar, H.B., "Probabilistic Design of Offshore Platforms: Nonlinear Wave Kinematics and Surface Fluctuation Effects," *ASCE Spring Convention*, Seattle, Washington, April, 1986.
- Haldar, A., and Kanegaonkar, H.B., "Stochastic Fatigue Response of Jackets Under Intermittent Wave Loading," *Offshore Technology Conference*, OTC 5332, Houston, Texas, pp. 377-386, May 1986.
- Kanegaonkar, H.B., and Haldar, A., "Offshore Platform Fatigue: Nonlinear Drag Effects," Georgia Institute of Technology, Atlanta, May, 1985.
- Haldar, A., and Kanegaonkar, H.B., "Probabilistic Fatigue Analysis of Offshore Platforms Subjected to Non-Gaussian Loading," *ASCE Structural Engineering Congress 1985*, Chicago, Illinois, September 1985.
- Haldar, A., and McDonald, E.J., "Uncertainty Analysis of Along Wind Estimation for Flexible Buildings," *Fifth U.S. National Conference on Wind Engineering*, Texas Tech University, Lubbock, Texas, November 6-8, 1985.
- Haldar, A., and Ayyub, B.M., "Risk Models for Correlated Non-Normal Variables," *Fifth ASCE-EMD Specialty Conference*, Laramie, Wyoming, Vol. 2, pp. 1237-1240, August 1-3, 1984.
- Haldar, A., and Ayyub, B.M., "A Practical Probabilistic Model," *ASCE EMD Specialty Conference*, Purdue University, Indiana, Vol. 2, pp. 948-951, May 23-25, 1983.
- Haldar, A., "Bending Members - Steel Design Current Practice," *American Institute of Steel Construction*, Atlanta, Georgia, October 31, 1983.
- Haldar, A., and Ayyub, B.M., "Probabilistic Lateral Loadings in Pressure Vessel Design," *ASME - Pressure Vessel Piping Conference*, Orlando, Florida, June, 1982.

- Hadjian, A.H., Smith, C.B., Haldar, A., and Ibanez, P., "Variability in Engineering Aspects of Structural Modeling," *Proceedings, Sixth World Conference on Earthquake Engineering*, Vol. III, Paper No. 9-31, pp. 2729-2734, New Delhi, India, January, 1977.
- Haldar, A., *Discussion, Post SMiRT-4 International Seminar on Probabilistic and Extreme Load Design of Nuclear Plant Facilities*, San Francisco, California, Seminar Proceedings, published by the American Society of Civil Engineers, August, 1977.

E.3.4 Geotechnical Reliability Evaluations (Changed research direction from two-dimensional to three-dimensional modeling of geotechnical parameters in the presence of uncertainty, based on his doctoral thesis and with the help 1 doctoral student and several M.S. students)

E.3.4.1 Special Lectures with Technical Papers

- Haldar, A., "Probability of Liquefaction in a 3-D Soil Deposit," U.S. Army Waterways Experiment Station, Vicksburg, Mississippi, September 21, 1982.
- Haldar, A., "Statistical Methods - Numerical Methods in Geomechanics," NATO Advanced Study Institute, Lisbon, Portugal, September 1981.

E.3.4.2 Special Invited Presentations without Technical Paper (international)

- Haldar, A., "Probabilistic Evaluation of Seismic Induced Liquefaction of Soil and Risk of Structural Damage Associated with It," Central Research Institute of Building and Construction, Ministry of Metallurgical Industry, Beijing, People's Republic of China, September 6, 1986. (Before China opened up to outside world)
- Haldar, A., "A State-of-the-Art Review of Practical Structural and Geotechnical Reliability Techniques," Tongji University, Shanghai, People's Republic of China, September 15, 1986.
- Haldar, A., "Evaluation of Seismic Reliability of Buildings and Probabilistic Evaluation of Seismic Induced Liquefaction of Soil," Tongji University, Shanghai, People's Republic of China, September 16, 1986.

E.3.4.3 Book Chapters

- Haldar, A., *Probability of Liquefaction in a 3-D Soil Deposit*, Probabilistic Methods in Geotechnical Engineering, U.S. Army Waterways Experiment Station, 1983, 72 pages.
- Haldar, A., *Chapter 6 - Statistical Methods*, Numerical Methods in Geomechanics, edited by J.B. Martins, NATO Advanced Study Institute Series, D. Reidel Publishing Company, Boston, 1981.

E.3.4.4 Refereed papers

- Huh, J., Tran, Q. H., Haldar, A., Park, I., Park, J. H., and Ahn, J-H., "Seismic vulnerability assessment of a shallow two-story underground RC box structure in highly weathered soil," *Geomechanics and Engineering, An International Journal*, (under review).
- Jae Hyun Park, Kiseok Kwak, K., Huh, J., and Haldar, A., "LRFD Implementation and Realistic Reliability Analysis for Axially Loaded Driven Piles," *Journal of Mechanics*, (under review).
- Huh, J., Haldar, A., Kiseok Kwak, K., and Jae Hyun Park, J. H., "Realistic Risk Assessment of Axially Loaded Pile-Soil System Using a Hybrid Reliability Method," *Georisk: Assessment and Management of Risk for Engineered Systems and Geohazards*, Vol. 4, Issue 3, pp. 118-126, 2010.
- Huh, J., Haldar, A., Kwak, K., and Park, J., "Probabilistic Reliability Estimation of an Axially Loaded Pile," *International Association for Computer Methods and Advances in Geomechanics*, pp. 1811-1817, 2008.
- Chowdhury, M., Wang, D., and Haldar, A., "System Reliability Evaluation of Pile-Founded Structures," *American Institute of Aeronautics and Astronautics*, AIAA-95-1264-CP, pp. 931-941, April, 1995.
- Chern, S., and Haldar, A., "Probabilistic Evaluation of Soil-Structure Interaction in Liquefaction," *Sixth International Conference on Numerical Methods in Geomechanics*, Innsbruck, Austria, Vol. 3, pp. 1805-1810, April 11-15, 1988.
- Haldar, A., and Chern, S., "Uncertainty in Dynamic Anisotropic Strength of Sand," *Journal of the Geotechnical Engineering Division*, ASCE, Vol. 113, No. 5, pp. 528-533, May 1987.
- Haldar, A., and Miller, F.J., "Statistical Evaluation of Cyclic Strength of Sand," *Journal of the Geotechnical Engineering Division*, ASCE, Vol. 110, No. 12, pp. 1785-1802, December, 1984.
- Haldar, A., and Miller, F.J., "Statistical Estimation of Relative Density," *Journal of the Geotechnical Engineering Division*, ASCE, Vol. 110, No. 4, pp. 525-530, April, 1984.
- Haldar, A., and Tang, W.H., "Statistical Study of Uniform Cycles in Earthquake Motion," *Journal of the Geotechnical Engineering Division*, ASCE, Vol. 107, No. GT5, Proc. Paper 16239, pp. 577-589, May, 1981.
- Haldar, A., "Liquefaction Study - A Decision Analysis Framework," *Journal of the Geotechnical Division*, ASCE, Vol. 106, No. GT12, Proc. Paper 15925, pp. 1297-1312, December, 1980.
- Haldar, A., and Tang, W.H., "A Probabilistic Evaluation of Liquefaction Potential," *Journal of the Geotechnical Engineering Division*, ASCE, Vol. 105, No. GT2, Proc. Paper 14374, pp. 145-163, February, 1979.
- Haldar, A., and Tang, W.H., "Uncertainty Analysis in Relative Density," *Journal of the Geotechnical Engineering Division*, ASCE, Vol. 105, No. GT7, Proc. Paper 14665, pp. 899-904, July, 1979. Closure published, *Journal of the Geotechnical Engineering Division*, ASCE, Vol. 106, No. GT9, pp. 1080, September, 1980.

E.3.4.5 Refereed conference papers (ICOSSAR & ICASP are the two most prestigious

international organizations for the community of stochastic mechanics and structural reliability. Each organizes international gathering every four years. All published papers are reviewed by at least two peers.)

- Huh, J., Haldar, A., Kwak, K., and Park, J., "Reliability Evaluation of a Pile Foundation System in Strength and Serviceability Limit States," *10th International Conference on Structural Safety and Reliability (ICOSSAR'09)*, Paper No. ICOSSAR2009: 0066, 2009.
- Haldar, A., and Chern, S., "Probabilistic Study on Structural Damage Due to Settlement in a Liquefied Sand Deposit," *Fourth International Conference on Structural Safety and Reliability (ICOSSAR)*, Vol. III, pp. III-301 to III-310, May 27-29, 1985.

E.3.4.6 Conference papers

- Chowdhury, M.R., and Haldar, A., "An Identification of Significant Failure Modes for a Pile Group for Evaluating its System Probability of Satisfactory Performance," *2000 Specialty Conference on Probabilistic Mechanics and Structural Reliability*, University of Notre Dame, July 24-26, 2000, Paper No. PMC2000-142, (CD-ROM).
- Chern, S., and Haldar, A., "Application of Microcomputer to the Analysis of Pore Water Pressure Generation under Cyclic Loading," *Seventh National Conference on Microcomputers in Civil Engineering*, Orlando, Florida, November 8-10, 1989.
- Haldar, A., and Chern, S., "Probabilistic Evaluation of Differential Settlement in Earthquake-Induced Liquefaction Considering Soil-Structure Interaction," *Ninth World Conference on Earthquake Engineering*, Tokyo, Japan, Vol. III, pp. III-489 - III-494, August 2-9, 1988.
- Haldar, A., "Anisotropy in Liquefaction Risk Evaluation," *Third International Conference on Soil Dynamics and Earthquake Engineering*, Princeton University, Princeton, New Jersey, June 22-24, 1987.
- Haldar, A., and Chern, S., "Soil-Structure Interaction in Earthquake-Induced Liquefaction," *Fifth Canadian Conference on Earthquake Engineering*, Carleton University, Ottawa, Ontario, Canada, pp. 493-499, July 6-8, 1987.
- Haldar, A., and Chern, S., "Probabilistic Prediction of Pore Pressure-Induced Settlement for Isotropically and Anisotropically Consolidated Deposits," *International Symposium on Engineering Geology Problems in Seismic Areas*, Italy, Vol. xxi, Part III, pp. 9-22, April 14-19, 1986.
- Haldar, A., and Luettich, S.M., "Risk of Structural Damage in Liquefaction," *Third U.S. National Conference on Earthquake Engineering*, Charleston, South Carolina, Vol. 1, pp. 575-586, August 24-28, 1986.
- Haldar, A., "Application of Risked-Based Design in Sitting and Geotechnical Problems," *National Science Foundation Workshop*, Chicago, Illinois, pp. 52-54, August 4-5, 1986.
- Haldar, A., and Chern, S., "Pore Pressure-Induced Structural Damage in an Anisotropic Soil Deposit," *Eighth Symposium on Earthquake Engineering*, University of Roorkee, India, Vol. 1, pp. 189-196, December 29-31, 1986.
- Haldar, A., and Chern, S., "Probabilistic Pore Pressure-Induced Structural Damage,"

Second International Conference on Soil Dynamics and Earthquake Engineering, pp. 3/3 - 3/12, June 28 - July 3, 1985.

- Haldar, A., and Luettich, S.M., "Subsidence Approach to Damage in Earthquake-Induced Liquefaction," *Second International Conference on Soil Dynamics and Earthquake Engineering*, pp. 3/13 - 3/22, June 28 - July 3, 1985.
- Haldar, A., and Hochaimi, N.S., "Uniform Cycles in Earthquake Motions," Eighth World Conference on Earthquake Engineering, *International Association of Earthquake Engineering*, San Francisco, California, Vol. III, pp. 151-157, July, 1984.
- Haldar, A., "Statistical Site Characterization," *Fourth Australia-New Zealand Conference on Geomechanics*, Perth, Australia, Vol. 2, pp. 530-534, May 14-19, 1984.
- Haldar, A., "Risk of Damage in Liquefaction," *Specialty Conference on Probabilistic Mechanics and Structural Reliability*, Berkeley, California, pp. 224-227, January 11-13, 1984.
- Haldar, A., and Miller, F.J., "Damage in Liquefaction - A Probabilistic Model," *Fourth Canadian Conference on Earthquake Engineering*, Vancouver, B.C., Canada, pp. 332-340, June, 1983.
- Haldar, A., and Miller, F.J., "Factors in Laboratory Evaluation of Cyclic Strength," *ASCE Spring Convention of 1982*, Las Vegas, April, 1982.
- Haldar, A., and Miller, F.J., "Probabilistic Evaluation of Liquefaction in a 3-D Soil Deposit," *International Conference on Soil Dynamics and Earthquake Engineering*, Southampton, U.K., Vol. 2, pp. 607-618, July, 1982.
- Haldar, A., "Uniform Cycles in Earthquakes: A Statistical Study," *Proceedings, International Conference on Recent Advances in Geotechnical Engineering and Soil Dynamics*, St. Louis, Missouri, Vol. 1, pp. 195-198, April 26 - May 2, 1981.
- Haldar, A., "Progress Report on Seismic Risk of Liquefaction," *Proceedings, Sixth National Meeting of the Universities Council for Earthquake Engineering Research*, University of Illinois, Urbana, Illinois, pp. 118-120, May, 1980.
- Haldar, A., "Decision Analysis in Liquefaction Study," *Preprint 3785*, ASCE Fall Convention, Atlanta, Georgia, October 22-26, 1979.

E.4 Original Research in collaboration with industry

E.4.1 Nondestructive Inspection-Based Updating and Maintenance of Infrastructures for Metro Atlanta Rapid Transit Authority (MARTA) (with the help of 1 doctoral student, several M.S. students and post-doctoral fellows)

E.4.1.1 Special Invited Presentations without Technical Paper (international)

- Haldar, A., "Fatigue Evaluation of Steel Bridges," Asian Institute of Technology, Bangkok, Thailand, January 18, 1999.
- Haldar, A., Industrial applications of RAMS (Reliability, Availability, Maintainability and Safety) Engineering: Present and future – A Case Study – Metro Atlanta Rapid Transit Authority (MARTA), ICRESH-ARMS 2015, Lulea Technical University,

Sweden, June 2, 2015.

E.4.1.2 Book Chapters

- Zhao, Z. , and Haldar, A., "*Fatigue reliability updating using non-destructive inspection*," in: *NDT Methods Applied to Fatigue Reliability Assessment of Structures*, J. Mohammadi, editor, American Society of Civil Engineers, pp. 139-156, 2004.
- Chen, G., and Haldar, A., "Fatigue Reliability Assessment and Updating with On-Line Nondestructive Inspection for Pressure Vessels," *PVP Vol. 487, Aging Management and License Renewal*, American Society of Mechanical Engineering, pp. 41-48, 2004.
- Zhao, A., and Haldar, A., *Chapter 6 - Reliability-Based Structural Fatigue Damage Evaluation and Maintenance Using Non-Destructive Inspections*, Uncertainty Modeling in Finite Element, Fatigue, and Stability of Systems, edited by A. Haldar, A. Guran and B.M. Ayyub, World Scientific Publishing Co., 1997, pp. 159-214.

E.4.1.3 Refereed papers

- Zhao, Z., and Haldar, A., "Fatigue Damage Evaluation and Updating Using Nondestructive Inspections," *Journal of Engineering Fracture Mechanics*, Vol. 53, No. 5, pp. 775-788, 1996.
- Haldar, A., and Zhao, Z., "Fatigue Risk Assessment and Updating Using Non-Destructive Inspections," *Fatigue and Fracture Mechanics in Pressure Vessels and Piping, PVP-Vol. 304*, American Society of Mechanical Engineering, pp. 453-460, July, 1995.
- Zhao, Z., Haldar, A., and Breen, F.L., "Fatigue Reliability Evaluation of Steel Bridges," *Journal of the Structural Division, ASCE*, Vol. 120, No. 5, pp. 1608-1623, May, 1994.
- Zhao, Z., Haldar, A., and Breen, F.L., "Fatigue Reliability Updating Through Inspections for Bridges," *Journal of the Structural Division, ASCE*, Vol. 120, No. 5, pp. 1624-1642, May, 1994.

E.4.1.4 Refereed conference papers (ICOSSAR & ICASP are the two most prestigious international organizations for the community of stochastic mechanics and structural reliability. Each organizes international gathering every four years. All published papers are reviewed by at least two peers.)

- Zhao, Z., and Haldar, A., "Fatigue Damage Mitigation Using Nondestructive Inspections," *7th International Conference on Structural Safety and Reliability (ICOSSAR'97)*, Vol. 2, pp. 1227-1234, 1998.
- Zhao, Z., Haldar, A., and Breen, F.L., "Reliability-Based Fatigue Inspection and Maintenance for Steel Bridges," *6th International Conference on Structural Safety and Reliability (ICOSSAR '93)*, August 9-13, Vol. 2, pp. 1035-1042, 1993.

E.4.1.5 Conference papers

- Chen, G., and Haldar, A., "On-line Nondestructive Inspection for Fatigue Reliability Assessment and Updating for Pressure Vessels," 9th ASCE EMD/SEI/GI/AD Joint Specialty Conference on Probabilistic Mechanics and Structural Reliability, Albuquerque, New Mexico, July 26-28, 2004, (CD-ROM).
- Haldar, A., and Zhao, Z., "Fatigue Reliability Updating of Aging Steel Bridges Using Non-Destructive Inspection," ASCE Structures Congress, Seattle, Washington, May 29 to June 1, 2003.
- Haldar, A., and Zhao, Z., "Use of NDE in Fatigue and Fracture Reliability," 1999 *Structures Congress, ASCE*, New Orleans, Louisiana, April 18-21, pp. 821-824, 1999.
- Haldar, A., and Zhao, Z., "Reliability-Based Maintenance Strategy Using NDI," 1996 *Specialty Conference on Probabilistic Mechanics and Structural Reliability*, Worcester, Massachusetts, August 7-9, 1996, pp. 364-367.
- Haldar, A., and Zhao, Z., "Fatigue Reliability Evaluation, Updating and Maintenance of Steel Bridges Using NDI," *NSF Workshop on Reliability in Bridge Engineering*, University of Colorado, Boulder, Colorado, October 2-4, 1996, pp. 179-184.
- Haldar, A., and Zhao, Z., "Reliability-Based Inspection Strategy for Fatigue Risk Management," *Fourteenth International Conference on Offshore Mechanics and Arctic Engineering*, OMAE 1995, American Society of Mechanical Engineers, Vol. II - Safety and Reliability, pp. 215-222, June, 1995.
- Haldar, A., and Breen, F.L., "Reliability-Based Inspection and Maintenance of a Public Transportation System," *Structure Congress 1990*, ASCE, pp. 620-621, Baltimore, Maryland, April 30 to May 3, 1990.
- Breen, F.L., and Haldar, A., "Reliability-Based Inspection and Maintenance Program For MARTA's Structures," *1989 Rapid Transit Conference*, American Public Transit Association, Pittsburgh, Pennsylvania, June 3-8, 1989, (Invited Presentation).

E.4.2 Missile Impact on Nuclear Power Plants and Construction Deficiency Evaluation (Bechtel Power Corporation) (A pre-9/11 method to mitigate impact problem, with the help of 4 M.S. students)

E.4.2.1 Refereed papers

- Haldar, A., "Fabrication/Construction Deficiency Evaluation – A Novel Approach," *Journal of Structural Engineering*, Vol. 30, No. 1, pp. 43-50. 2003.
- Haldar, A., Discussion of "Damage Probability of Turbine Missile Impact," *Journal of the Structural Engineering Division*, ASCE, Vol. 113, No. 3, pp. 644-645, March, 1987.
- Haldar, A., and Hamieh, H.A., "Local Effect of Solid Missiles on Concrete Structures," *Journal of the Structural Engineering Division*, ASCE, Vol. 110, No. 5, pp. 948-960, May, 1984.
- Haldar, A., Hatami, M., and Miller, F.J., "Concrete Structures: Penetration Depth Estimation," *Journal of the Structural Engineering Division*, ASCE, Vol. 109, No. 1, pp. 245-250, January, 1983. Closure published, *Journal of the Structural Engineering Division*, ASCE, Vol. 109, No. 12, pp. 2956, December, 1983.

- Haldar, A., "Probabilistic Evaluation of Welded Structures," *Journal of the Structural Engineering Division*, ASCE, Vol. 108, No. ST9, Proc. Paper 17321, pp. 1943-1955, September, 1982. Closure published, *Journal of Structural Engineering Division*, ASCE, Vol. 109, No. 10, pp. 2482-2483, October, 1983.
- Haldar, A., and Miller, F.J., "Penetration Depth in Concrete for Non-deformable Missiles," *Journal of Nuclear Engineering and Design*, Vol. 71, No. 1, pp. 79-88, July (II), 1982.
- Haldar, A., Discussion on "Impact of Solid Missiles on Concrete Barriers," *Journal of the Structural Engineering Division*, ASCE, Vol. 107, No. ST11, pp. 2307-2309, November, 1981.
- Haldar, A., "Probabilistic Evaluation of Construction Deficiencies," *Journal of the Construction Engineering Division*, ASCE, Vol. 107, No. CO1, Proc. Paper 16114, pp. 107-119, March, 1981.
- Haldar, A., "Turbine Missile - A Critical Review," *Journal of Nuclear Engineering and Design*, Vol. 55, No. 3, pp. 293-304, November, 1979.
- Haldar, A., "A Probabilistic Evaluation of Turbine Missile Damage Potential," *Publication PVP-PB-030*, American Society of Mechanical Engineers, pp. 1-20, December, 1978.

E.4.2.2 Conference papers

- Ayyub, B.M., and Haldar, A., "Probabilistic Safety Analysis of RC Buildings During Construction," *Structure Congress 1990*, ASCE, pp. 71-71, Baltimore, Maryland, April 30 to May 3, 1990.
- Haldar, A., "Energy-Balanced Approach to Evaluate Local Effects of Impact of Non-Deformable Missiles on Concrete Structures," *Eighth International Conference on Structural Mechanics in Reactor Technology (SMiRT)*, Paper No. J 6/3, Brussels, Belgium, August 1985.
- Ayyub, B.M., and Haldar, A., "Reliability of RC Buildings during Construction," *Specialty Conference on Probabilistic Mechanics and Structural Reliability*, Berkeley, California, pp. 355-358, January 11-13, 1984.
- Haldar, A., Hamieh, H.A., and Miller, F.J., "Penetration and Spallation Depth Estimation for Concrete Structures," *Seventh International Conference on Structural Mechanics in Reactor Technology (SMiRT)*, Chicago, Illinois, Paper No. J 7/2, October, 1983.
- Haldar, A., and Miller, F.J., "Local Effects Evaluation of Concrete Structures," *Interassociation Symposium, Concrete Structures Under Impact and Impulsive Loading*, West Berlin, West Germany, pp. 345-357, June, 1982.
- Haldar, A., "Impact Loading - Damage Predicting Equations," *Proceedings, Sixth Conference on Structural Mechanics in Reactor Technology (SMiRT)*, Paris, France, Paper No. J 8/4, Vol. J(b), pp. 1-8, August, 1981.
- Haldar, A., "Probabilistic Evaluation of Welded Structures," *Preprint 80-540*, presented at the ASCE Convention of South Florida, October 27-31, 1980.
- Haldar, A., "Composite Strength - A Probabilistic Evaluation," *Symposium on Evaluation*

of Existing Concrete Structures, ACI Committee 437, Washington, D.C., November, 1979.

E.4.3 Health Assessment of Lock Gates (U.S. Army Engineers Waterways Experiment Station, with the help of 1 doctoral student and 1 M.S. student)

E.4.3.1 Book Chapters

- Chowdhury, M., and Haldar, A., *Chapter 4 -Performance Based Reliability Evaluation of Structure-Foundation Systems*, Recent Developments in Reliability-Based Civil Engineering edited by A. Haldar, World Scientific Publishing Co., pp. 55-75, 2006.

E.4.3.2 Refereed papers

- Chowdhury, M. R., Wang, D., and Haldar, A., "An Investigation on the System Reliability of Pile Supported Navigational Structures," *Journal of the Structural Engineering, ASCE*, Vol. 124, No. 1, pp. 80-88, January, 1998.
- Wang, D., Chowdhury, M., and Haldar, A., "System Reliability Evaluation Considering Strength and Serviceability Requirements, " *International Journal of Computers and Structures*, Vol. 62, No. 5, pp. 883-896, March, 1997.

E.4.4 Seismic Design with Post-Northridge Connections (Seismic Structural Design Associates, California) (analytically justified a patented connection, with the help of 2 doctoral students)

E.4.4.1 Refereed papers

- Merabian A., Ali, T., and A. Haldar, A., "Nonlinear Analysis of a Steel Frame," *Journal of Nonlinear Analysis Series A: Theory, Methods & Applications*, 71(12), pp. 616-623, 2008.
- Mehrabian, A., and Haldar, A., "Mathematical Modeling of a "Post-Northridge" Steel Connection," *International Journal of Modeling, Identification and Control*, Vol. 2, No. 3, pp. 195-207, 2007.
- Mehrabian, A., and Haldar, A., "Some Lessons Learned from Post-earthquake Damage Survey of Structures in Bam, Iran Earthquake of 2003," *Structural Survey*, Vol. 23, No. 3, pp. 180-192, 2005.
- Mehrabian, A., Haldar, A., and Reyes, A. S., "Seismic Response Analysis of Steel Frames with Post-Northridge Connection," *Steel and Composite Structures*, Vol. 5, No. 4, pp. 271-287, 2005.

E.4.4.2 Conference papers

- Mehrabian A., Ali, T., and A. Haldar, A., “Nonlinear Analysis of Steel Frame,” Proceedings of the Fifth World Congress on Nonlinear Analysis (WCNA-2008), Orlando, Florida, July, 2008.
- Mehrabian, A., Haldar, A., and Moslehpour, S., “Nonlinear Analysis of Steel Frames with Ductile Connections,” Session ENG 204-087, Proceedings of The 2006 IJME - INTERTECH Conference, 14 pages, 2006.

E.5 Major Technical Reports

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- Azizoltani, H., and Haldar, A., “Risk Estimation Of Nonlinear Time Domain Dynamic Analyses Of Large Systems,” *Report No. CEEM-17-002*, 2017.
- Al-Hussein, A., and Haldar, A., “A Novel Technique for Structural Health Assessment in the Presence of Nonlinearity,” *Report No. CEEM-15-002* (based on Dr. Al-Hussein’s Ph.D. dissertation), August 2015.
- Camacho, J. R. G., “Structural Reliability of Steel Moment Resisting Frames using Performance Based Seismic Design/Analysis Concept,” *Report No. CEEM-15-001* (based on Mr. J. R. G. Camacho’s M.S. thesis), May 2015.
- Das, A. K., “Health Assessment of Three Dimensional Large Structural Systems Using Limited Uncertain Dynamic Response Information,” *Report No. CEEM-12-001* (based on Dr. A. K. Das’ Ph.D. dissertation), December, 2012.
- Pena Ramos, Carlos, E., and Haldar, A., “Three Dimensional Dynamic Response of Reinforced Concrete Bridges under Spatially Varying Ground Motion,” *Report No. CEEM-11-001* (based on Carlos E. Pena Ramos’ Ph.D. dissertation), December, 2011.
- Kamat, A. G., and Haldar, A., “Split Concrete Model for Shear Behavior of Concrete Beams,” *Report No. CEEM-06-001*, Department of Civil Engineering and Engineering Mechanics, University of Arizona, Tucson, Arizona, December 2006 (based on Dr. Kamat’s Ph.D. dissertation) 343 pages.
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Northridge Connection,” *Report No. CEEM-02-001*, Department of Civil Engineering and Engineering Mechanics, University of Arizona, Tucson, Arizona, May 2002 (based on Dr. Ali’s Ph.D. dissertation) 267 pages.

- Upton, M. N., and Haldar, A., “System Reliability Assessment of Reinforced Concrete Frames Under Seismic Loading,” *Report No. CEEM-01-102*, Department of Civil Engineering and Engineering Mechanics, University of Arizona, Tucson, Arizona, January 2001, prepared for U.S. Army Engineer Research & Development Center, Vicksburg, MS.
- Lee, S. Y., and Haldar, A., “Static and Dynamic Reliability Analysis of Frame and Shear Wall Structural Systems,” *Report No. CEEM-01-101*, Department of Civil Engineering and Engineering Mechanics, University of Arizona, Tucson, Arizona, December 2000 (based on Dr. Lee's Ph.D. dissertation) 138 pages.
- Ling, X., and Haldar, A., “Linear and Nonlinear Time Domain System Identification at Element Level for Structural Systems with Unknown Excitation,” *Report No. CEEM-00-101*, Department of Civil Engineering and Engineering Mechanics, University of Arizona, Tucson, Arizona, May 2000 (based on Dr. Ling's Ph.D. dissertation) 185 pages.
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- Reyes, A. S., and Haldar, A., "Inelastic Nonlinear Seismic Response and Ductility Evaluation of Steel Frames with Fully, Partially Restrained and Composite Connections," prepared for the National Science Foundation, *Report No. CEEM-97-101*, Department of Civil Engineering and Engineering Mechanics, University of Arizona, Tucson, Arizona, April 1997 (based on Dr. Reyes's Ph.D. dissertation) 174 pages.
- Zhao, Z., and Haldar, A., "Primary and Deformation-Induced High and Low Cycle Fatigue Reliability of Infrastructure with Updating Through Non-Destructive Inspection," prepared for the National Science Foundation, *Report No. CEEM -95-102*, Department of Civil Engineering and Engineering Mechanics, University of Arizona, Tucson, Arizona, February 1995 (based on Dr. Zhou's Ph.D. dissertation) 280 pages.
- Haldar, A., "Research Outlines on Reliability-Based Fatigue Damage Evaluation and Inspection Planning of Steel-Plated Structures," prepared for the Norwegian Research Council, The Norwegian Institute of Technology, Trondheim, Norway, December, 1995.
- Gao, L., and Haldar, A., "Stochastic Finite Element Method for the Reliability Analysis of Nonlinear Frames with PR Connections," prepared for the National Science Foundation, *Report No. CEEM-94-105*, Department of Civil Engineering and Engineering Mechanics, University of Arizona, Tucson, Arizona, October 1994 (based on Dr. Gao's Ph.D. dissertation) 224 pages.
- Wang, D., and Haldar, A., "An Element Level Time Domain System Identification Technique with Unknown Input Information," prepared for the National Science Foundation, *Report No. CEEM-94-106*, Department of Civil Engineering and Engineering Mechanics, University of Arizona, Tucson, Arizona, December 1994 (based on Dr. Wang's Ph.D. dissertation) 151 pages.

- Wang, D., and Haldar, A., "System Reliability Estimation of a Pile Group in Navigation Systems," *Technical Report prepared for the U.S. Army Waterways Experiment Station (WES)*, Vicksburg, Mississippi, December, 1994.
- Haldar, A., "Methods of Random-Fuzzy Reliability Analysis of Existing Structures," *Report prepared for National Institute of Standards and Technology*, Gaithersburg, Maryland, 1992, 25 pages.
- Zhou, Y., and Haldar, A., "Efficient Stochastic Finite Element Method for the Reliability Analysis of Nonlinear Frame Structures," prepared for the National Science Foundation, *Report No. CEEM-91-101*, Department of Civil Engineering and Engineering Mechanics, University of Arizona, Tucson, Arizona, December 1991 (based on Dr. Zhou's Ph.D. dissertation) 204 pages.
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- Mahadevan, S., and Haldar, A., "Stochastic Finite Element-Based Structural Reliability Analysis and Optimization," prepared for the National Science Foundation, *Report No. CEEM-89-103*, Department of Civil Engineering and Engineering Mechanics, University of Arizona, Tucson, Arizona, April 1989 (based on Dr. Mahadevan's Ph.D. dissertation) 258 pages.
- Haldar, A., "Phase I - Mathematical Aspect of Sampling Strategies," *Report prepared for MARTA*, Atlanta, Georgia, January 1988.
- Haldar, A., and Josey, L.A., "A Statistical Inspection Program for MARTA's Aerial Structures," *Report prepared for MARTA*, Atlanta, Georgia, August 1988.
- Haldar, A., "Report No. 2 - A Study of Main Trusses in the Nosedock Empennage Enclosure," *Report prepared for Tampa Steel Erecting Company*, Tampa, Florida, June 1987.
- Haldar, A., and Chern, S., "Probabilistic Analysis of Pore Pressure-Induced Damage Potential for Structures Subjected to Earthquake Motions," prepared for the National Science Foundation, *Report No. SCEGIT-86*, School of Civil Engineering, Georgia Institute of Technology, Atlanta, Georgia, 1986 (based on Dr. Chern's Ph.D. dissertation) 327 pages.
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- Haldar, A., and Luettich, S.M., "Subsidence Approach to Damage in Earthquake-Induced Liquefaction," prepared for the National Science Foundation, *Report No. SCEGIT-85-106*, School of Civil Engineering, Georgia Institute of Technology, Atlanta, Georgia, 1985, 210 pages.
- Haldar, A., "Probabilistic Evaluation of Damage Potential in Earthquake-Induced Liquefaction in a 3-D Soil Deposit," prepared for the National Science Foundation, *Report No. SCEGIT-83-117*, School of Civil Engineering, Georgia Institute of Technology, Atlanta, Georgia, November 1983, 65 pages.
- Ayyub, B.M., and Haldar, A., "Structural Safety Analysis of Reinforced Concrete Buildings During Construction," School of Civil Engineering, Georgia Institute of

Technology, Atlanta, Georgia, December 1983 (Ph.D. dissertation), 348 pages.

- Haldar, A., and Miller, F.J., "Research Initiation - Probabilistic Evaluation of Damage Potential in Earthquake-Induced Liquefaction in a 3-D Soil Deposit," prepared for the National Science Foundation, *Report No. SCEGIT-101-82*, School of Civil Engineering, Georgia Institute of Technology, Atlanta, Georgia, March 1982, 134 pages.
- Haldar, A., "A Probabilistic Study of HVAC Hanger Weldings - San Onofre Nuclear Generating Station," *Report prepared for University Mechanical and Engineering Contractors*, San Clemente, California, January 1979.

E.6 Technical Reports Published with M.S. Students

- Maciosek, A. J., "Analysis and Mitigation of Vortex-Induced Vibrations in Overhead Transmission Line Conductors," December, 2016.
- Aonyas, S., and Haldar, A., "Case Study of Performance Based Seismic Design Approach of a Special Moment Frame," August, 2016.
- Milligan, J., and Haldar, A., "Structural Design of Thermal Mass," May, 2014.
- Hartke, N., and Haldar, A., "Flexural Strength on Post-Tensioned, Concrete-Filled, Tubular-Flanged Girders," May, 2014.
- Sedgeman, A., and Haldar, A., "America's Current Infrastructure and Health Assessment of Bridges," 2013.
- Rey, A.I., and Haldar, A., "Determination of Axial Strength Resistance Factors for Drilled Shafts in Arizona Soils using AASHTO Beta Method," 2013.
- Kloac, I., and Haldar, A., "Issues Related to Life Cycle Cost Analysis of Bridges," May, 2011.
- Safdar, A.R., and Haldar, A., "Health Assessment of Real Structures Using Frequency and Time Domain System Identification Methods," April, 2011.
- Tucker, S.S., and Haldar, A., "Over-Height Vehicle Collisions with Bridge Girders," April, 2010.
- Carlaftes, J.A., and Haldar, A., "Dynamic Response of Bridges to Vehicular Loadings," 2008.
- Freestone, S.B., and Haldar, A., "A Review of Climatological Data for Ground Snow Loads in Arizona," 2006.
- Seo, J.M., and Haldar, A., "Inelastic Response Spectrum and Strength Reduction Factor – A Critical Review," 2004.
- Watson, D.M., and Haldar, A., "Seismic Design of Non-Building Structures and Non-Structural Elements," 2003.
- Hachem, W.D., and Haldar, A., "Design of Steel Beams with Web Openings," 2001.
- Upton, M., and Haldar, A., "Seismic reliability of reinforced concrete frame," 2000.
- Kazakoff, J.P., and Haldar, A., "Frequency Domain Estimation Techniques Used in Transfer Function Estimation and Experimental Modal Analysis," 1999.
- Hoe, K-L., and Haldar, A., "Applications of Seismic Isolation Devices in Highway Bridges," 1998.
- Hajjar, R., and Haldar, A., "Component Reliability with Updating Through Inspections

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- Schott, D.V., and Haldar, A., "Structural Behavior of Lateral Load Resisting Steel Frames," 1997.
- Parra Bobadilla, B., and Haldar, A., "Along-Wind Response of a Water Tank," 1996.
- Bitar, F., and Haldar, A., "Reliability Analysis for Deformation-Induced Fatigue Cracking in Steel Bridges," 1995.
- Lewsley, H.J., and Haldar, A., "A Structural Analysis Feasibility Study of a Glass Fiber Reinforced Plastic Sculpture Pavilion," 1994.
- Johnson, F.T., and Haldar, A., "Analysis and Design of Curved Box Girders," 1991.
- Zhao, Z., and Haldar, A., "Reliability Analysis of Crack Growth Under Random Loading Considering Modeling Updating in the MARTA Bridge System," 1991.
- Ruiz, J.G., and Haldar, A., "Soil-Structure Interaction," 1988.
- Djohari, H., and Haldar, A., "A Nonlinear Optimization of Simple Span Prestressed Concrete Beam and its Reliability," 1988.
- Josey, L.A., and Haldar, A., "The Development of a Statistical Inspection Program of MARTA's Aerial Structures," 1988.
- Kuei, H., and Haldar, A., "The Investigation of Methods for Reliability-Based Optimization Structural Design," 1987.
- Goel, A.S., and Haldar, A., "Design of Orthotropic Steel Bridges," 1986.
- Yau, Y.C., and Haldar, A., "The Behavior and Design of Hybrid Plate Girders," 1986.
- Wu, S., and Haldar, A., "Design of Mat Foundation Resting on Elastic Medium," 1985.
- Tamara, L.M., and Haldar, A., "Load Factors and Load Combinations Based on Probabilistic Approach," 1985.
- McDonald, E., and Haldar, A., "Uncertainty Analysis of Along Wind Estimation for Flexible Buildings," 1985.
- Jonnalagadda, S., and Haldar, A., "Design of Beams with Web Openings," 1985.
- Basharkhah, F., and Haldar, A., "Post Buckling and Inelastic Strength of Cold Formed Steel Members," 1985.
- Back, S.Y., and Haldar, A., "The Preliminary Design Criterion of Guyed Tower Platform," 1985.
- Hwang, S-J., and Haldar, A., "The Stochastic Finite Element Analysis," 1985.
- Nee, K-M., and Haldar, A., "Nonlinear Analysis of Plane Frame with Semi-Rigid Connection," 1985.
- Juhn, G.H., and Haldar, A., "Comparison of Methods for Generating Equipment Design Response Spectra," 1984.
- Hasrouny, A.M., and Haldar, A., "Behavior and Strengthening of Steel Structures," 1984.
- Haddad, E.H., and Haldar, A., "Energy Absorbed Due to the Impact of Non-Deformable Missile on Concrete Structures," 1984.
- Kaaki, J.I., and Haldar, A., "Comparison between Load and Resistance Factor Design Method and Allowable Stress Design Method," 1984.
- Guerrero, P., and Haldar, A., "Seismic Design of Non-Structural Elements in Building Construction," 1984.
- Martinez, J.J., and Haldar, A., "Design of Beams with Eccentric Openings Noncomposite

and Composite Sections," 1984.

- Samarah, M.S., and Haldar, A., "Distribution of Wheel Loads on Highway Bridges," 1984.
- Sun, A-C., and Haldar, A., "Structural Optimization of Steel Frame," 1983.
- Hamieh, H., and Haldar, A., "Penetration and Spallation Depth Estimation for Concrete Structures," 1983.
- Madaghjian, V., and Haldar, A., "Projectile Penetration into Buried Structures," 1983.
- Boustani, F., and Haldar, A., "Reliability and Risk Analysis of Concrete Structures," 1983.
- Hochaimi, N.S., and Haldar, A., "Equivalent Uniform Cycles in Earthquake Motions," 1983.
- Alamri, A.M., and Haldar, A., "Earth Subsidence Investigation and Risk Evaluation," 1983.
- Chao, J-S, A., and Haldar, A., "Seismic Analysis and Design of Secondary System Attached to Civil Engineering Structures During Earthquakes," 1982.
- Huang, Y-J., and Haldar, A., "Probability-Based Safety Factor Evaluation," 1982.
- Ziara, M.M., and Haldar, A., "Comparison between Elastic and Plastic Steel Design for Multi-Story Steel Frames," 1982.
- Hatami, M., and Haldar, A., "Probabilistic Evaluation of Impact Formulation," 1981.

F. Invited Presentations (National)

- Haldar, A., "Past, Present and Future of Structural Engineering," Department of Civil Engineering and Engineering Mechanics, University of Arizona, September 4, 2015.
- Haldar, A., "Health assessment of Bridges," 61st Arizona Conference on Roads & Streets, April 5, 2012.
- Haldar, A., "Past, Present and Future of Structural Engineering," Arizona Society of Civil Engineers, April 11, 2007.
- Haldar, A., "Structural Engineering – Past, Present, and Future," Department of Civil Engineering and Engineering Mechanics, University of Arizona, Tucson, February 2, 2007.
- Haldar, A., "A Novel System Identification-Based Structural Health Assessment Technique under Uncertainty," Vanderbilt University, Nashville, Tennessee, May 31, 2006.
- Haldar, A., "Structural Health Assessment – A Novel Approach," Illinois Institute of Technology, Chicago, Illinois, October 21, 2005.
- Haldar, A., "Local Level Defect Detection and Parameter Estimation for Existing Structures," Raytheon Missile Systems Corporation, Tucson, AZ., April 9, 2001.
- Haldar, A., "Reliability Evaluation Using Stochastic Finite Element Method," Sandia National Laboratory, March 27, 2000.
- Haldar, A., "Reliability Analysis of Structures Subjected to Dynamic Loadings Using Nonlinear SFEM," Symposium Honoring Professor Alfredo H-S. Ang, May 20, 2000.
- Haldar, A., "Steel Design using LRFD," University of Sonora, Mexico, Nov. 14, 2000.

- Haldar, A., "Modern Teaching Methods," University of Sonora, Mexico, Nov. 15, 2000.
- Haldar, A., "Wind and Seismic Loads for Buildings," Phoenix, AZ, October 22, 1996.
- Haldar, A., "NEHRP Seismic Regulations for Steel," American Institute of Steel Construction, Phoenix, AZ, October 20, 1994.
- Haldar, A., "Eccentric Braced Frame," American Institute of Steel Construction, Phoenix, AZ, October 13, 1993.
- Haldar, A., "Practical Steel Design Using LRFD," American Institute of Steel Construction, Phoenix, AZ, February 28, 1991.
- Saadatmanesh, H., and Haldar, A., "Development of LRFD Formulation for Externally Prestressed Girders," American Association of State Highway and Transportation Officials (AASHTO), San Antonio, May 23, 1989.
- Haldar, A., "Stochastic Nonlinear Dynamic and Fatigue Response of Structures," University of Arizona, Tucson, Arizona, February 2, 1988.
- Haldar, A., "Construction Deficiency Evaluation," American Society of Civil Engineers, Georgia Section, January 10, 1986.
- Haldar, A., "Beam Design - Load and Resistance Factor Design," American Institute of Steel Construction, Atlanta, Georgia, December 18, 1986.
- Haldar, A., "Probabilistic Evaluation of Damage to Structures due to Earthquake-Induced Liquefaction," School of Geophysical Sciences, Georgia Institute of Technology, Atlanta, Georgia, February 27, 1984.
- Haldar, A., "Offshore Platform Fatigue: Nonlinear Drag Effects," Hydrosystems Seminar, Georgia Institute of Technology, Atlanta, Georgia, October 11, 1984.
- Haldar, A., "Bending Members - Steel Design Current Practice," American Institute of Steel Construction, Chicago, Illinois, October 31, 1983.

G. Contributions to scholarly professional service

G1. General Comments – Because of his own publication activities, Dr. Haldar receives at least two requests per month to review paper for almost all engineering journals covering different engineering disciplines. He also reviews proposals for new book for numerous publishers. Dr. Haldar reviews research proposals for numerous national funding agencies including National Science Foundation, Washington, D.C. National Research Council, National Academy of Sciences, Washington, D.C., etc. At the international level, he reviews research proposals for funding agencies including Australian Research Grants Scheme, Queen Elizabeth II Fellowships, Australian Research Grants Committee, University of Wollongong, New South Wales, Australia, Division of Science and Technology, Government of India, Academy of Science, the Czech Republic, Scientific Research and Technological Development, Government of Portugal, etc. Dr. Haldar organized many national and international technical conferences, technical sessions, chaired or co-chaired numerous technical and panel sessions, and organized celebratory event like ASCE's 150th anniversary celebration. Some of his major professional services are listed below.

G2. International Community

- Chair, International Scientific Committee and one of the chief architects of the event, International Symposium on Engineering under Uncertainty: Safety Assessment and Management (ISEUSAM - 2012).
- Founding Editor-in-Chief of “International Journal of Engineering under Uncertainty: Hazards, Assessment, and Mitigation”, New Delhi, India, 2008 – 2011.
- Advisory Board Member, “Life Cycle Reliability and Safety Engineering,” Society for Reliability and Safety, Mumbai, India.
- Editorial Board Member of numerous international journals.
- Invited to make presentations at the Central Research Institute of Building and Construction, Ministry of Metallurgical Industry, Beijing, Qinghua University, Beijing, and Tongji University, Shanghai, jointly sponsored by the People's Republic of China and the National Science Foundation. (This was very significant at that time; before China opened to the outside world).
- Organized, moderated, and chaired technical sessions in numerous international gatherings.
- Chair, International Scientific Committee and organized European-Simulation Based Reliability Assessment Method (Euro-SiBRAM’2002), Prague, Czech Republic.
- Member of Technical Advisory Panel, International Integrating Structural Reliability Analysis with Advanced Structural Analysis (ASRANet), Glasgow, Scotland, 2002.
- Member of International Scientific Committee, numerous international organizations.

G3. National Community

- Associate Editor, Journal of the Structural Engineering, ASCE, 1992 - 1995.
- Program Chair, Safety Engineering and Risk Analysis Division (SERAD), American Society of Mechanical Engineering, 2005 – 2006.
- Organized and co-Chaired Probabilistic Mechanics Conference, ASCE, University of Notre Dame, 2000.
- Chair, Technical Administrative Committee on Structural Safety and Reliability, ASCE, responsible at the national level for committees on Safety of Buildings, Reliability of Offshore Structures, Safety of Bridges, and Fatigue and Fracture Reliability, 1995-1999.
- Chair or member of numerous ASCE-sponsored technical committees.
- Organized, moderated, and chaired technical sessions in numerous national gatherings.
- Organized ASCE’s 150th anniversary celebration session, Past, Present, and Future of Reliability-Based Structural Design Worldwide, 2002.
- Reviewer of research proposals, National Science Foundation, Washington, D.C.
- Technical Advisor, National Research Council, National Academy of Sciences, Washington, D.C., March 1992 to 1997.
- Fellow, American Society of Civil Engineers, 1990- 2012.
- Professional Engineer, State of Arizona, 1989 – 2015 (currently inactive), State of California, 1978 – present, State of Illinois, 1979 - 1993 (currently inactive), and State of Georgia, 1980 - 1993 (currently inactive).