

Refereed Journal Publications

- [1] P. Kumar and Gaurav. Numerical modeling of structural frames with infills subjected to thermal exposure: State-of-the-art review. *Journal of Structural Fire Engineering*, 2016. in review.
- [2] Gaurav and P. Dayal. Updating SVD of tall matrices using Krylov subspaces. *Computers and Mathematics with Applications*, 2016. in revision.
- [3] A. Mandhyan, Gaurav, and S. Krishnamoorthi. A novel method for prediction of truss geometry from topology optimization. *Engineering with Computers*, 2016. in revision.
- [4] S. Krishnamoorthi, Gaurav, and A. Mandhyan. Web application for size and topology optimization of trusses and gusset plates. *arXiv*, page arXiv:1512.02881 [cs.OH], 2015.
- [5] Gaurav and H.L. Shah. Modeling of moisture in masonry structures: A case-study of structures in Chandkheda, Ahmedabad. *International Journal of Civil and Structural Engineering*, 1(4):5–9, December 2014.
- [6] Gaurav, S.F. Wojtkiewicz, and E.A. Johnson. Rapid reanalysis of generalized eigenvalue problem of locally perturbed dynamical systems. *Journal of Sound and Vibration*, 332:4354–4368, 2013.
- [7] Gaurav and S.F. Wojtkiewicz. Use of GPU computing for uncertainty quantification in computational mechanics: A case study. *Scientific Programming*, 19:199–212, 2011.
- [8] Gaurav, S.F. Wojtkiewicz, and E.A. Johnson. Efficient uncertainty quantification of dynamical systems with local nonlinearities and uncertainties. *Probabilistic Engineering Mechanics*, 26:561–569, 2011.
- [9] S.F. Wojtkiewicz, Gaurav, and Q.I. Odes. Efficient frequency response of locally uncertain linear structural systems. *ASCE Journal of Engineering Mechanics*, 137(2):147–150, 2011.
- [10] Gaurav, S.F. Wojtkiewicz, and L. Khazanovich. Optimal design of flexible pavements using a framework of DAKOTA and MEPDG. *International Journal of Pavement Engineering*, 12(2):137–148, 2011.
- [11] Gaurav and S.F. Wojtkiewicz. Efficient spectral response of locally uncertain linear systems. *Probabilistic Engineering Mechanics*, 25(4):419–424, 2010.
- [12] S.F. Wojtkiewicz, L. Khazanovich, Gaurav, and R. Velasquez. Probabilistic numerical simulation of pavement performance using MEPDG. *Road Materials and Pavement Design*, 11(2):291–306, 2010.
- [13] S. Chandrasekaran, Gaurav, and A.K. Jain. Ringing response of offshore compliant structures. *International Journal of Ocean & Climate Systems*, 1(3–4):133–144, 2010.
- [14] S.F. Wojtkiewicz and Gaurav. Efficient modal analysis of structures with local stiffness uncertainties. *International Journal for Numerical Methods in Engineering*, 80:1007–1024, 2009.
- [15] S.K. Shukla, Gaurav, and N. Sivakugan. A simplified extension of the conventional theory of arching in soils. *International Journal of Geotechnical Engineering*, 3:353–359, 2009.

- [16] S. Chandrasekaran, Gaurav, and S. Srivastava. Structural response of offshore TLPs under seismic excitations. *International Engineering & Technology Journal of Civil & Structures*, 1(1):7–12, 2008.
- [17] S. Chandrasekaran and Gaurav. Offshore triangular TLP earthquake motion analysis under distinctly high sea waves. *Journal of Ship and Offshore Structures (Taylor & Francis)*, 3(3):173–184, 2008.

Technical Reports

- [1] K. Matouš, Gaurav, and A. Gillman. Experimental and computational program for slow and fast cookoff for insensitive munitions testing. Phase II SBIR W31P4Q-09-C-0049 Final Report, M. Brandyberry, technical program manager, 2012.
- [2] K. Matouš and Gaurav. Experimental and computational program for slow and fast cookoff for insensitive munitions testing. Phase II SBIR W31P4Q-09-C-0049 Technical Report VI, M. Brandyberry, technical program manager, 2012.
- [3] K. Matouš and Gaurav. Experimental and computational program for slow and fast cookoff for insensitive munitions testing. Phase II SBIR W31P4Q-09-C-0049 Technical Report V, M. Brandyberry, technical program manager, 2012.
- [4] K. Matouš, Gaurav, and A. Gillman. Experimental and computational program for slow and fast cookoff for insensitive munitions testing. Phase II SBIR W31P4Q-09-C-0049 Technical Report IV, M. Brandyberry, technical program manager, 2012.
- [5] K. Matouš, Gaurav, and A. Gillman. Experimental and computational program for slow and fast cookoff for insensitive munitions testing. Phase II SBIR W31P4Q-09-C-0049 Annual Report, M. Brandyberry, technical program manager, 2011.
- [6] K. Matouš, Gaurav, and M. Mosby. Experimental and computational program for slow and fast cookoff for insensitive munitions testing. Phase II SBIR W31P4Q-09-C-0049 Technical Report III, M. Brandyberry, technical program manager, 2011.
- [7] Gaurav. Earthquake analysis of circular cylindrical tanks. Submitted for fulfillment of young engineers fellowship program (YEFP) 2006, Indian Institute of Science, 2006.

Conference Proceedings

- [1] P.R. Prakash and Gaurav. Development of a matrix method based framework for the thermo-mechanical analysis of RCC frames. In *PROTECT 2015, MI, USA*, 2015.
- [2] Gaurav and Harsh L. Shah. Modeling of moisture in masonry structures: A case-study of structures in Chandkheda, Ahmedabad. In *International Conference on Advances in Civil, Structural and Mechanical Engineering (CSME)*, Hong Kong, August 2014.
- [3] Gaurav, B. Bhatt, P. Kumar, and P. Raviprakash. Redesigning police barricade system for riots. In *International Conference on Design for a Billion*, India, November 2014.
- [4] S. Chandrasekaran, Gaurav, and A.K. Jain. Ringing response of offshore compliant structures. In *Proceedings of International Conference on Ocean Engineering (ICOE 2009)*, pages 55–56, IIT Madras, India, February 2009.

- [5] S. Chandrasekaran, G. Serino, A.K.Jain, S. Miranda, A. Gupta, Gaurav, and A. Sharma. Influence of varying inertia coefficient and wave directionality on TLP geometry. In *Eighth ISOPE Asia/Pacific Offshore Mechanics Symposium (ISOPE-PACOMS-2008)*, Bangkok, Thailand, November 2008.
- [6] S. Chandrasekaran, Gaurav, and S. Srivastava. Steady and transient response of triangular TLPs under random wave load. In *Seventh European Conference on Structural Dynamics (EuroDyn 2008)*, Southampton, U.K., July 2008. (CD-ROM: Ref. No. E64).
- [7] Gaurav. Response of a liquid-tank mounted building founded on firm ground to random vibration. In *Proceedings of National Conference on Civil Engineering & Technology*, pages S46–S53, Varanasi, India, January 2007.
- [8] S. Chandrasekaran, Gaurav, and S. Srivastava. Response behavior of TLPs under vertical ground excitation. In *Structural Engineering World Congress*, Bangalore, India, December 2007. (CD-ROM: Paper No. 167).
- [9] Gaurav, R. Kumar, S. Mandal, and V. Kumar. Linear deflection analysis of beams using genetic algorithms. In *Proceedings of All India Seminar on Innovations in Design and Construction of Concrete Structures*, pages 54–64, Varanasi, India, October 2005. (CD-ROM).
- [10] Gaurav. Finite difference method tool for analysis of combined footings. In *Proceedings of All India Seminar on Innovations in Design and Construction of Concrete Structures*, pages 177–186, Varanasi, India, October 2004.
- [11] Gaurav. Role of geo-synthetics in civil engineering. In *Seminar on Recent Trends in Civil Engineering*, Varanasi, India, March 2004. (CD-ROM).

Professional Presentations

- [1] P. Kumar and Gaurav. Thermo-mechanical modeling of reinforced concrete masonry infill panels exposed to fire. In *EMI/PMC 2016*, USA, May 2016.
- [2] Vaibhav Palkar, Gaurav Srivastava, Olga Kuksenok, Anna C. Balazs, and Pratyush Dayal. Using stability analyses to predict dynamic behaviour of self-oscillating polymer gels. In *March Meeting of the American Physical Society (APS)*, USA, March 2015.
- [3] P. Raviprakash and Gaurav. Development of matrix method for the analysis of rcc frames subjected to fire. In *International Conference on Safety (ICS) 2014*, India, December 2014.
- [4] P. Kumar and Gaurav. FE analysis of rcc masonry infill panels subjected to thermal exposure. In *International Conference on Safety (ICS) 2014*, India, December 2014.
- [5] A. Mandhyan, Gaurav, and S. Krishnamoorthi. Development of web application for shape and topology optimization of truss structure and gusset plates. In *XXIV International Workshop on Computational Micromechanics of Materials (IWCMM)*, Spain, October 2014.
- [6] Gaurav and K. Matouš. Multi-physics meso-scale finite element simulation of hmx-based solid propellant subjected to thermal insults. In *March Meeting of the American Physical Society (APS)*, USA, March 2014.
- [7] Fast calculation of damped eigenproperties of locally modified linear dynamical systems. ASCE EMI/PMC Conference 2012, Notre Dame, IN, USA, June 2012.

- [8] Efficient numerical algorithms for uncertainty quantification in computational mechanics using GPUs. SIAM Conference on Computational Science and Engineering, Reno, NV, USA, March 2011.
- [9] Efficient uncertainty quantification using GPUs. Graduate Seminar, Department of Civil Engineering, University of Minnesota, Minneapolis, MN, USA, January 2011.
- [10] Use of GPU computing for uncertainty quantification in computational mechanics. ASCE Engineering Mechanics Institute Conference, EMI 2010, Los Angeles, CA, USA, August 2010.
- [11] Computationally efficient uncertainty quantification of large dynamical systems with local nonlinearities. Graduate Seminar, Department of Civil Engineering, University of Minnesota, Minneapolis, MN, USA, April 2010.
- [12] Efficient response estimation of related dynamical systems subjected to random inputs. Tenth US National Congress on Computational Mechanics (USNCCM), Columbus, OH, USA, July 2009.
- [13] Springing and ringing response of triangular tension leg platforms. Graduate Seminar, Department of Civil Engineering, University of Minnesota, Minneapolis, MN, USA, April 2008.
- [14] Response of a liquid-tank mounted building founded on firm ground to random vibration. National Conference on Civil Engineering & Technology, Varanasi, India, January 2007.
- [15] Linear deflection analysis of beams using genetic algorithms. All India Seminar on Innovations in Design and Construction of Concrete Structures, Varanasi, India, October 2005.
- [16] Finite difference method tool for analysis of combined footings. All India Seminar on Innovations in Design and Construction of Concrete Structures, Varanasi, India, October 2004.