

## List of Publications (Cited: 1272 times as per google scholar)

### Journal Articles

1. **B. Hazra**, A.J.Roffel, S.Narasimhan and M.D.Pandey (2010), "Modified Cross Correlation Method for Blind Identification of Structures". *Journal of Engineering Mechanics, ASCE*, Vol-136(7).
2. **B. Hazra** and S.Narasimhan (2010), "Wavelet-based blind identification of the UCLA Factor building using ambient and earthquake responses". *Smart Materials and Structures*, IOP, Vol-19(2).
3. **B. Hazra**, A.Sadhu, R.Lourenco and S.Narasimhan, (2010), "Re-Tuning Tuned Mass Dampers Using Ambient Vibration Measurements". *Smart Materials and Structures*, IOP, Vol-19(11).
4. S.Shirali, **B. Hazra**, S.Narasimhan and M.D.Pandey (2009), "Independent component regression for predicting the responses of biaxial base-isolated buildings". *Earthquake Engineering and Structural Dynamics*, Wiley, Vol-39(5).
5. **B. Hazra**, A. Sadhu, A.J.Roffel, P.Paquet and S.Narasimhan (2010), "Under-determined Blind Identification of Structures using Modified Cross Correlation Method". *Journal of Engineering Mechanics, ASCE*, Vol-138(4).
6. **B. Hazra**, A.Sadhu, A.J.Roffel, and S.Narasimhan (2010), "Hybrid Time and Time-Frequency Blind Source Separation Towards Ambient System Identification of Structures". *Computer-Aided Civil and Infrastructure Engineering*, Wiley-Blackwell, Vol-27(5).
7. A.Sadhu, **B. Hazra**, S. Narasimhan and M. D. Pandey (2010), "Decentralized Modal Identification using Wavelet Transforms". *Smart Materials and Structures*, IOP, Vol-20(12).
8. A. Sadhu, **B. Hazra** and S.Narasimhan (2010), "Blind Identification of Earthquake-Excited Structures". *Smart Materials and Structures*, IOP, Vol-(4).
9. A. Sadhu and **B. Hazra** (2012), "A Novel Damage Detection Algorithm using Time-series Analysis-based Blind Source Separation" *Shock and Vibration*, IOS press, USA, doi: 10.3233/SAV-120759.
10. **B. Hazra** and A.Sadhu (2012), "Output-only de-tuning assessment of tuned mass dampers", *Journal of Civil Structural Health Monitoring*, Springer-Verlag, USA, doi: 10.1007/s13349-012-0031-2.
11. A.Sadhu, **B. Hazra** and S.Narasimhan (2012), "Ambient Modal Identification of Structures Equipped with Tuned Mass Dampers using Parallel Factor Blind Source Separation", *Smart Structures and Systems*, Techno press, Vol.13, No.2, pp.257-280.
12. A.Sadhu, **B. Hazra** and S.Narasimhan (2013). "Decentralized Modal Identification of Structures using Parallel Factor decomposition and Sparse Blind Source Separation", *Mechanical Systems and Signal Processing*, Vol. 41, issues 1-2, Elsevier.
13. **B. Hazra**, A. Sadhu and S. Narasimhan (2015), "Fault Detection of Gearboxes using Synchro-squeezing Transform", *Journal of Vibration and Control*, 23(19), pp. 3108-3127.
14. "Methods and systems to monitor health of rotor blades-I ". *United States Patent Application 20150184536*, Date of filing: Dec-12, 2013, Date of Publication: July-2, 2015.
15. "Methods and systems to monitor health of rotor blades-II ". *United States Patent Application 20150184533*, Date of filing: Dec-12, 2013, Date of Publication: July-2, 2015.
16. **B. Hazra**, A. Garg, V. Gadi and C.W.W. Ng (2016), "Probabilistic analysis of suction in homogeneously vegetated soils", *Catena*, Elsevier, Vol. 149, pp. 394-401.

17. Das, G., **Hazra, B.**, Garg, A., Ng, C.W.W., Lateh, H. and Avani, N. (2017) "Bivariate probabilistic modelling of hydro-mechanical properties of vegetated soil", *Advances in Civil Engineering Materials, ASTM*, 6(1), pp. 235-257.
18. Das, G., **Hazra, B.**, Garg, A., Ng, C.W.W (2017). "Impact of hydrological and mechanical correlations on the reliability of vegetated slopes", *ASCE-ASME Journal of Risk and Uncertainty Analysis*, ASCE, 3(4), pp. 04017029.
19. Krishnan, M., Bhowmik, B., Tiwari, A., **Hazra, B.**, (2017). "Online damage detection using Recursive Principal Component Analysis and Recursive Condition Indicators", *Smart Materials and Structures*, IOP, Vol. 26, No. 8, <https://doi.org/10.1088/1361-665X/aa7220>.
20. Prakash, A., **Hazra, B.**, Sreedeeep, S, (2017). "Probabilistic analysis of water retention characteristic curve of fly ash", *International Journal of Geomechanics*, ASCE, 17 (12), [https://doi.org/10.1061/\(ASCE\)GM.1943-5622.0001024](https://doi.org/10.1061/(ASCE)GM.1943-5622.0001024).
21. Krishnan, M., Bhowmik, B., **Hazra, B.**, Pakrashi, V. (2017). " Real time damage detection using recursive principal components and time varying auto-regressive modeling", *Mechanical Systems and Signal Processing*, Elsevier, Vol.101, pp. 549-574.
22. Das, G., **Hazra, B.**, Garg, A. and Ng, C.W.W. (2017). "Stochastic hydro-mechanical stability of vegetated slopes: An integrated copula based framework", *Catena*, Elsevier, Vol. 160, pp. 124-133.
23. Goswami, U, P., Bhargav, K., **Hazra, B.**, and Goyal, M, K. (2017). "Spatiotemporal and joint probability behaviour of temperature extremes over the Himalayan region under changing climate", *Theoretical and Applied Climatology*, <https://doi.org/10.1007/s00704-017-2288-1>.
24. Das, S. and **Hazra, B.** (2017). "Frequency dependent principal component analysis of multi-component earthquake ground motions", *Earthquake Engineering and Structural Dynamics*, Wiley, <https://doi.org/10.1002/eqe.3008>.
25. Cahill, P., **Hazra, B.**, Karoumi, R., Mathewson, A, and Pakrashi, V. (2018). "Vibration energy harvesting based monitoring of an operational bridge undergoing forced vibration and train passage", *Mechanical Systems and Signal Processing*, Elsevier, <https://doi.org/10.1016/j.ymssp.2018.01.007>.
26. Cahill, P., **Hazra, B.**, Karoumi, R., Mathewson, A, and Pakrashi, V. (2018). " Data of Piezoelectric Vibration energy harvesting of a bridge undergoing forced vibration and train passage", *Data in Brief*, Elsevier, Elsevier, Vol. 17, 261-266.
27. Bhowmik, B., Krishnan, M., **Hazra, B.**, Pakrashi, V. (2018). "Real-time unified single-and multi-channel structural damage detection using recursive singular spectrum analysis", *Structural Health Monitoring*, Sage, <https://doi.org/10.1177/1475921718760483>.
28. Prakash, A., **Hazra, B.**, Sreedeeep, S, (2018). "Uncertainty quantification in water retention characteristic curve of fly ash using copulas", *Journal of Testing and Evaluation*, ASTM, vol. 47, No. 4.
29. Singh, S., Prakash, A., Garg, A., **Hazra, B.**, and Das, G, (2018). "Stochastic modelling of relative permeability for vegetated covers", *International Journal of Geomechanics*, ASCE, 18(9), 06018020.
30. Goswami, U, P., **Hazra, B.**, and Goyal, M, K. (2018). "Copula-based probabilistic characterization of precipitation extremes over North Sikkim Himalaya", *Atmospheric Research*, Elsevier, <https://doi.org/10.1016/j.atmosres.2018.05.019>.
31. Prakash, A., **Hazra, B.**, Sreedeeep, S, (2018). " Probabilistic analysis of unsaturated fly ash slope", *Journal of Hazardous, Toxic, and Radioactive Waste*, ASCE (in press).
32. Prakash, A., Bordoloi, S., **Hazra, B.**, Garg, A., Sreedeeep, S., and Wang, Q, (2018). "Probabilistic Analysis of Soil Suction and Crack Intensity in Fiber Reinforced Soil Under Drying-Wetting Cycles: An Experimental and Copula Modeling Approach", *Environmental Geotechnics*, <https://doi.org/10.1680/jenge.18.00067>.

33. Singh, S., Prakash, A., **Hazra, B.**, Sarmah, A., Garg, A., and Zhu, H,H, (2018)." Stochastic modelling of relative water permeability in vegetative soils with implications on stability of bioengineered slope", *Stochastic Environmental Research and Risk Assessment*, Springer, 32 (12), 3541-3559.
34. Garg, A., **Hazra, B.**, Yangping, W., and Zhu, H, H, (2019). "A simplified probabilistic analysis of water content and wilting in soil vegetated with non-crop species", *Catena*, Elsevier, Vol. 175, pp. 123-131.
35. Wang, Q., Li, Z., Garg, A., **Hazra, B.**, and Hui, D, (2019). "Effects of TMD on correlation of wind-induced responses and combination coefficients of ESWLs of high-rise buildings", *The Structural Design of Tall and Special Buildings*, Wiley (Accepted).
36. Nath, K., Dutta, A., and **Hazra, B.**, (2019). "An iterative polynomial chaos approach toward stochastic elastostatic structural analysis with non-Gaussian randomness", *International Journal for Numerical Methods in Engineering*, Elsevier, <https://doi.org/10.1002/nme.6086>
37. Nath, K., Dutta, A., and **Hazra, B.**, (2019). "An iterative polynomial chaos approach for solution of structural mechanics problem with Gaussian material property", *Journal of Computational Physics*, Vol. 390, Pages 425-451, Elsevier.
38. Jha, S., Das, J., Sharma, A., **Hazra, B.**, and Goyal, M, K. (2019). " Probabilistic evaluation of vegetation drought likelihood and its implications to resilience across India", *Global and Planetary Change*, Elsevier, Vol. 176, pages 23-25.
39. Okosun, F., Hazra, B., and Pakrashi, V., (2019). "Vibration based leak detection of water pipes using output only piezoelectric sensors, *European Physical Journal-Special topics*, (in-press).
40. Prakash, A., **Hazra, B.**, Sreedeeep, S, (2019). "Probabilistic analysis of soil water characteristic curve of bentonite: A multivariate copula approach", *International Journal of Geomechanics, ASCE* (in-press).
41. Tripura, T., Bhowmik, B., **Hazra, B.** and Pakrashi, V. (2019). " Real-time damage detection of degrading systems", *Structural Health Monitoring*, Sage, pp.1-28, doi: 10.1177/1475921719861801
42. Bali, S., **Hazra, B.** and Pakrashi, V. (2019). "Quantile autoregressive modeling for non-linear change detection in vibrating structural systems", *Mechanics Research Communications*, Elsevier, <https://doi.org/10.1016/j.mechrescom.2019.103397>.
43. Bhowmik, B., Tripura, T., **Hazra, B.** and Pakrashi, V. (2019). " First order eigen perturbation techniques for real time damage detection of vibrating systems: Theory and applications, *Applied Mechanics Reviews, ASME*, 71(6): 060801, <https://doi.org/10.1115/1.4044287>
44. Bhowmik, B., Tripura, T., **Hazra, B.** and Pakrashi, V. (2019). " Robust linear and nonlinear structural damage detection using recursive canonical correlation analysis", *Mechanical Systems and Signal Processing*, Elsevier, <https://doi.org/10.1016/j.ymssp.2019.106499>
45. Bhowmik, B., Tripura, T., **Hazra, B.** and Pakrashi, V. (2019). "Real time structural modal identification using recursive canonical correlation analysis and application towards online structural damage detection", *Journal of Sound and Vibration*, Elsevier, Vol-468, 115101.
46. Mucchielli, P., Bhowmik, B., **Hazra, B.** and Pakrashi, V. (2020). "Higher-order stabilised perturbation for recursive eigen-decomposition estimation", *ASME-Journal of Vibration and Acoustics*, <https://doi.org/10.1115/1.4047302>
47. Tripura, T., Gogoi, A, and **Hazra, B.**(2020). "An Ito-Taylor weak 3.0 method for Stochastic Dynamics of Nonlinear systems", *Applied Mathematical Modelling*, Elsevier, <https://doi.org/10.1016/j.apm.2020.05.014>
48. Nath, K., Dutta, A., and **Hazra, B.**, (2020). "Long duration response evaluation of linear structural system with random system properties using time dependent polynomial chaos", *Journal of Computational Physics*, Elsevier, In-press.

49. Prakash, A., Bordoloi, S., **Hazra, B.**, Garg, A., Sreedeeep, S., and Hong-hu Zhu (2020) " Modeling Dependence Among Suction, Moisture, and Cracking of a Novel Biochar Synthesized from Weed Species ", *Advances in Civil Engineering Materials*, ASTM, 9(1).
50. Prakash, A., **Hazra, B.**, Sreedeeep, S. (2019). "Probabilistic analysis of soil-water characteristic curve using limited data", *Applied Mathematical Modelling*, Elsevier, 89 (1) [doi.org/10.1016/j.apm.2020.08.023](https://doi.org/10.1016/j.apm.2020.08.023).
51. Sharma, A., **Hazra, B.**, Spagnoli G, and Sreedeeep, S. (2020) "Probabilistic estimation of Specific Surface Area and Cation Exchange Capacity: Global Multivariate Distribution", *Canadian Geotechnical Journal* (Accepted), in-press.
52. Zhu, Z., Wei, L., Wang, Q., Tiwari, N., and **Hazra, B.** (2020) "Study on wind-induced vibration control of linked high-rise buildings by using TMDI", *Journal of Wind Engineering and Industrial Aerodynamics* (Accepted), Elsevier, in-press.
53. Prakash, G., Yuan, X, X., **Hazra, B.**, and Mizutani, D., (2020) "Towards a Big Data Based approach: A review on Degradation Models for Prognosis of Critical Infrastructure", *ASME-Journal of NDE, Diagnostics and Prognostics of Engineering Systems* (accepted).
54. Nayan Deep Tiwari, Ankush Gogoi, **Budhaditya Hazra** and Qinhua Wang, "A shape memory alloy-tuned mass damper inerter system for passive control of linked-SDOF structural systems under seismic excitation". *Journal of Sound and Vibration*, Elsevier, doi: <https://doi.org/10.1016/j.jsv.2020.115893>.
55. Sharma, A., **Hazra, B.**, and Sreedeeep, S. (2020) " Stochastic seepage and slope stability analysis using vine-copula based multivariate random field approach: Consideration to non-Gaussian spatial and cross-dependence structure of hydraulic parameters", *Computers and Geotechnics*, Elsevier, [10.1016/j.compgeo.2020.103918](https://doi.org/10.1016/j.compgeo.2020.103918).
56. Qinhua Wang., Nayan Deep Tiwari., **Budhaditya Hazra.**, Wei Lei., and Zhiwen Zhu. (2020) " MTMDI for Mitigating Wind-Induced Responses of Linked High-Rise Buildings", *Journal of Structural Engineering*, ASCE, 147(4).
57. Panda. S., Tripura. T, and **Hazra, B.** (2021)," Online damage detection of earthquake excited structure based on near real-time envelope extraction" *Structural Health Monitoring*, SAGE, in-press.
58. Panda. S., Tripura. T, and **Hazra, B.** (2021), "First-Order Error-Adapted Eigen Perturbation for Real-Time Modal Identification of Vibrating Structures". *ASME-Journal of Vibration and Acoustics*, 143 (5).
59. Mahato, S., **Hazra, B.**, and Chakrabarti, A. (2020), "Multi-variate Empirical Mode Decomposition (MEMD) for Ambient Modal Identification of RC Road Bridge" *Structural Monitoring and Maintenance*, 7(4), 283-294.
60. Nagajyothi Virivinti, **Budhaditya Hazra** & Kishalay Mitra (2020) Optimizing grinding operation with correlated uncertain parameters, *Materials and Manufacturing Processes*, DOI: [10.1080/10426914.2020.1854473](https://doi.org/10.1080/10426914.2020.1854473).
61. Sharma, A., **Hazra, B.**, Gupt, C,B., and Sreedeeep, S. (2020) " Incorporating Global Distribution with Site-Specific Data for Probabilistic Analysis of Soil–Water Characteristic Curve of Bentonite", *Journal of Hazardous, Toxic, and Radioactive Waste*.
62. Gupt, C,B., Sharma, A., **Hazra, B.**, and Sreedeeep, S. (2020) "Predictive Model for Soil Shrinkage Characteristic Curve of High Plastic Soils ", *Geotechnical testing Journal*, ASTM.
63. **Hazra, B.**, Goyal, M,K., and Kumar Bhargav K. (2021) "Generation of multivariate synthetic hydrological series using blind source separation techniques and copula functions", *Journal of Environmental Informatics*.
64. Nath, K., Dutta, A., and **Hazra, B.**, (2021). "An adaptive scheme for random field discretization using KL expansion", *Engineering with Computers*, Elsevier, In-press.

65. Nath, K., Dutta, A., and **Hazra, B.**, (2020). "Iterative Polynomial Dimensional Decomposition approach towards solution of structural mechanics problems with material randomness", *Probabilistic Engineering Mechanics*, Elsevier, In-press.
66. Garg, S., Gogoi, A., **Hazra, B.**, Chakraborty, S., (2021). "Machine learning based digital twin for stochastic nonlinear multi-degree of freedom dynamical system." *Probabilistic Engineering Mechanics*, Elsevier, In-press.
67. Panda, S., Bhowmik, B., **Hazra, B.**, and Pakrashi, V., (2022). "Feedback-driven error-corrected single-sensor analytics for real-time condition monitoring" *International Journal of Mechanical Sciences*, Elsevier, In-press.
68. Gogoi A, Panda S and **Hazra B.**, (2022). "A computational framework for mean square responses of bidirectional nonlinear systems under correlated stochastic excitation". *Journal of Sound and Vibration*, Elsevier. <https://doi.org/10.1016/j.jsv.2021.116689>.
69. Tripura, T., Imran, M., **Hazra, B.**, Chakraborty, S., (2022). "Change of measure enhanced near exact Euler Maruyama scheme for the solution to nonlinear stochastic dynamical systems ." *Journal of Engineering Mechanics*, ASCE (accepted).

### Patents

70. "Methods and systems to monitor health of rotor blades", *United States Patent*, No. 9657588, 2017. *Co-inventors*: Panicker, MR., Behera, A, K., Rajagopalan, V, Ryali, V, Badami, V, V., **Hazra, B.**
71. "Systems and methods for monitoring a wind turbine", *Indian patent*, No. 2108/CHE/2012. *Co-inventors*: Mukherjee, R., Somakumar, R., Ambekar, A., Ali, S., **Hazra, B.**, Banerjee, A., and Samanta, S.

### Editorial

72. Pakrashi, V., Murphy, J., and **Hazra, B** (2021) "Special Section on Risk and Uncertainties in Offshore Wind and Wave Energy Systems", *ASME J. Risk Uncertainty*, 7(4), 040301, <https://doi.org/10.1115/1.4052359>

### Conference

73. B.Hazra, S.Narasimhan and M.D.Pandey, "Stable Adaptive Control of Seismically Excited Nonlinear Structures". *Proceedings of SEI 2008 Structures Congress*, Vancouver, 2008.
74. B.Hazra, A.J.Roffel, S.Narasimhan and M.D.Pandey, "Blind identification of civil structures". *Proceedings of SEI 2009 Structures Congress*, Austin, April 2009.
75. B.Hazra and S.Narasimhan, "Wavelet-based blind identification of Civil Structures". *Proceedings of ASCE-ASME-SES Conference*, June 2009, Blacksburg, Virginia.
76. B.Hazra and S.Narasimhan, "Hybrid Time and Time-Frequency Blind Source Separation towards Ambient System Identification of Structures". *Proceedings of EMI-2010 (ASCE) Conference*, August-2010, USC, Los-Angeles.
77. B.Hazra and S.Narasimhan, "Re-Tuning of Tuned Mass Dampers Using Ambient Vibration Measurements", *Proceedings of EMI-2010 (ASCE) Conference*, August 2010, USC, Los-Angeles.
78. A.Sadhu, B.Hazra and S.Narasimhan, "Decentralized modal identification using wavelet transform", *Proceedings of EMI-2011 (ASCE) Conference*, June 2011, Boston, USA.

79. B.Hazra and S.Narasimhan, "Rotating machinery diagnosis using synchro-squeezing transform and condition indicators", *Proceedings of MFPT Conference-2013*, May 2013, Cleveland, Ohio, USA.
80. B.Hazra and S.Narasimhan, "Gear Fault Diagnosis using synchro-squeezing transform and condition indicators", *Key Engineering Materials*, Vols. 567-570 (2013), pp:449-456, Trans tech publications, Switzerland (DOI:10.4028/www.scientific.net/KEM.569-570.449).
81. B.Hazra, S.Pantula, S.Narasimhan, "Novelty detection in airport baggage conveyor gear-motors using Synchro-squeezing transform and Self-organizing maps", *Prognostics and Health Management Society Annual Conference-2013*, New Orleans, USA.
82. A.Sadhu, B.Hazra, "An Improved Blind Source Separation for Structural Mode Identification Using Fewer Measurements", *Structural Health Monitoring and Damage Detection, Volume 7, Proceedings of the Society for Experimental Mechanics Series 2015*, IMAC, Florida, USA. pp 19-25.
83. B. Hazra and S. Narasimhan (2016) "Gearbox Fault Detection using Synchro-squeezing Transform", *Procedia Engineering*, Elsevier, vol. 144, pp. 187-194.
84. Bhowmik, B., **Hazra, B.**, Pakrashi, V. (2017). "Online damage detection using recursive principal components", *Procedia Engineering*, Elsevier, vol. 199, pp. 2108-2113.