

# Curriculum Vitae of Dr. B.K. Maheshwari

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## Summary

- Education:** Ph.D. (Geotechnical-Earthquake Eng), M.E. Honors (Earthquake Eng), B.E. Honors (Civil Eng)
- Experience:** Total Experience of Research, Teaching and Industry – **20 years** (Post - Ph.D.)  
Research and Teaching (3.5 years in USA, 14.5 years in India), Industry (2 years in Japan)
- Publications:** **Refereed Journals – 42;** International - 33 and National - 9  
Conference Proceedings – 87; International - 46 and National - 41
- Research Expertise:** Geotechnical-Earthquake Eng., Dynamic Soil-Structure Interaction, Liquefaction, Nonlinear Dynamic Finite Element Modeling, Dynamic Soil Properties, Seismic Slope Stability, Landslides
- Research Supervision:** **Ph.D. – 10;** Awarded -6, In Progress -4  
**M. Tech. – 48;** Awarded – 44, In Progress - 4

## Personal Information

- Name:** Bal Krishna Maheshwari
- Nationality:** Indian
- Date of Birth:** September 30, 1969
- Best way to Contact:** E-mail: bkmahfeq@iitr.ac.in and bkmaheshwari.iitr@gmail.com
- Contact Information:** Dr. B.K. Maheshwari  
Professor (Soil Dynamics)  
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## Present Occupation

- Professor,** Dept. of Earthquake Engineering, IIT Roorkee, India **April 2014~Present**
- Head,** Centre of Excellence in Disaster Mitigation and Management, IIT Roorkee, India **Feb. 2015~Feb. 2018**
- Courses Taught:** Geotechnical Earthquake Engineering (EQ 521), ERD of Foundations (EQ 524),  
Dynamic Soil-Structure Interaction (EQ 519), Machine Foundations (EQ 572), Finite Element Method (EQ 504)
- Research Supervision:** Ph.D. Students – 4 (in progress), Master Students – 5 (in progress)
- Engineering Consulting Work:** Seismic Analysis of Embankment Dams, Liquefaction potential of site,  
Soil Profiling using MASW, Site specific seismic design parameters, Ground improvement techniques
- Laboratory In Charge:** Soil Dynamics (Upgrading and modernizing lab), procured Resonant Column Apparatus
- Service:** Helping the department and institute in various activities, such as conducting exams, conferences,  
short-term courses, development of course-curricula

## Education

- Ph.D. in Geotechnical Earthquake Engineering, Saitama University, Japan** **September 1997**
- Thesis Title: Soil-Structure-Interaction on the Structures with Pile Foundations - A Three Dimensional Nonlinear Dynamic Analysis of Pile Foundations
  - Supervisor: Prof. Hiroyuki WATANABE (Deceased)
- Master in Earthquake Engineering (Soil Dynamics) , University of Roorkee, India** **January 1994**
- Dissertation Title: Projectile Penetration in Soils
  - Supervisor: Prof. D.K. PAUL
- Bachelor of Engineering (Civil), University of Jodhpur, India** **June 1992**
- Senior Project: Survey and Design of a National Highway Road

## **Past Research and Teaching Experience (Before becoming Professor - 14 Years)**

**Associate Professor, Dept. of Earthquake Engineering, IIT Roorkee, India** **Oct. 2009 to April 2014**

- Courses Taught: Geotechnical EQ Eng., Machine Foundations and Dynamic Soil-Structure Interaction
- Research Supervision: Ph.D. – 3, M. Tech. – 13 (Awarded)
- Externally Funded Research Projects - 3
- Development of Soil Dynamics Laboratory – procured cyclic triaxial testing system

**Assistant Professor, Dept. of Earthquake Engineering, IIT Roorkee, India** **Dec. 2004 to Oct. 2009**

- Courses Taught: Soil Dynamics, ERD of Foundations, Machine Foundations
- Research Supervision: Ph.D. – 3, M. Tech. – 12 (Awarded)
- Externally Funded Research Projects - 3
- Development of Soil Dynamics Laboratory – procured a small geotechnical centrifuge

**Assistant Professor, Civil Engineering Group, BITS, Pilani, India** **July 2003-Dec. 2004**

- Courses Taught: Structural Dynamics, Mechanics of Solids, Engineering Graphics, Measurement Techniques
- M.E. Dissertation Supervised: One on “Linear & Nonlinear Dynamic Behavior of Layered Soil Stratum”
- Geotechnical Eng. Consultancy work: Basic field and laboratory tests. .

**Postdoctoral Researcher, Washington University, St. Louis, USA** **October 1999-April 2003**

- Project: Performance of River Lock Structures (Soil-Pile-Structure-Interaction Analysis).
- Sponsors: Mid-America Earthquake Center (a NSF center) and U.S. Army Corps of Engineers.
- Principal Investigator and Advisor: Dr. Kevin Z. Truman, Professor and Chairman CE department.
- Developed improved methods for assessing the seismic vulnerabilities of typical river lock structures (founded on piles) in Mid America.
- Instructor for Soil Lab, Materials Lab and Probabilistic Methods in Civil Engineering.

## **Industrial and Professional Experience (2 Years)**

**Engineer, Katsujima Co., Ltd., Tokyo, Japan** **December 1997-October 1999**

Katsujima is a consulting firm with expertise in geotechnical-earthquake engineering and seismology. It manufactures seismographs, collects and processes ground motion data for multiuse. Responsibilities:

- Analysis: Analyze data of earthquake motion (interpreting seismograms, locating hypocenter).
- Reports: Prepare geotechnical reports including the results of the data analysis.
- Task Leader: Lead a team to identify and execute new projects.
- Research: Develop a computer code for shear wave velocity profile of the ground using the F-K spectra.
- Service: Represented the company at an international symposium (ESG 98).

## **Research Supervision**

**Ph.D. Total – 10; Completed - 6, In Progress - 4**

1. Pavan K. Emani, Title: “Nonlinear Dynamic Soil-Structure Interaction Analysis using Hybrid Methods” (Awarded 2009), Co-supervisor - No
2. Rajib Sarkar, Title: “Three Dimensional Seismic Behaviour of Soil-Pile Interaction with Liquefaction”, (Awarded 2009), Co-supervisor - No
3. Harendra P. Singh, Title: “Liquefaction Studies of Composite Materials”, (Awarded 2010), Co-supervisor – Prof. Swami Saran
4. Madani Syed N., Title: “Nonlinear Seismic Soil-Structure Interaction using Scaled Boundary Finite Element Method”, (Awarded 2015) Co-supervisor – No

5. Bablu Kirar, Title: "Dynamic Stiffness Characteristics of Unreinforced and Reinforced Sands", (**Awarded Feb. 2017**), Co-supervisor – Dr. R.S. Jakka
6. Pradeep Muley, Title: "Assessment of Liquefaction Potential using In-Situ and Laboratory Tests", (**Awarded April 2017**), Co-supervisor – Prof. D.K. Paul
7. Sangeeta, Title: "Earthquake Induced Landslide Hazard Assessment in Uttarakhand", (In Progress, Registration July 2015), Co-supervisor - No
8. Aparna Kanth, Title: "Liquefaction Resistance of Sands using Experimental and Numerical Approach", (In Progress, Registration July 2016), Co-supervisor - No
9. Sukanta Das, Title: "Foundations in Hill Slopes for Seismic Loads", (In Progress, Registration January 2018), Co-supervisor - No
10. Mohd. Firoj, Title: "Soil-Structure Interaction for Nuclear Power Plants", (In Progress, Registration January 2018), Co-supervisor - No

**Master (M. Tech.) Total –48; Completed - 44, In Progress - 4**

1. Pali Bhawe, "Effect of Saturation on Dynamic Soil Properties in Low Strain Range" (2018)
2. Prakash Moha, "Behaviour of Combined Pile-Raft Foundation (CPRF) under Seismic Loading (2018)
3. Suresh Kumar, "Earth Pressure and Seismic Design of Retaining Walls" (2018)
4. Deepak Rawat, "Assessment of a Typical Landslide in Uttarakhand and Mitigation Solutions (2018)
5. Pankaj Rana, "Poisson's Ratio of Soils using Resonant Column Apparatus" (2017)
6. Pravindra Singh Bhan, "Effect of Seismic Load on the Strength of Saturated Fine Grained Soil" (2017)
7. Shahbaz Alam, "Effect of Frequency on Dynamic Soil Properties using Cyclic Triaxial Apparatus" (2017)
8. Upender Pathania, "Landslide Assessment in Himalayan Region: A Study based on Decision Support Software" (2017)
9. Aniruddha Bhaduri. "Seismic Slope Stability for Landslides" (2016)
10. Devendra Shrimal, "Design of Pile Foundations for Earthquake Loads", (2016)
11. Mukesh Petshali, "Evaluation of Liquefaction Resistance using Different Methods" (2016)
12. Saurabh Verma, "Effects of Fines on Liquefaction Potential of Solani Sand using Cyclic Triaxial" (2016)
13. Shinde Ninad S., "Evaluation of Dynamic Properties of Sands using Resonant Column Apparatus" (2016)
14. Ankit Agarwal. "Dynamic Properties of Soil in Low Strain Range" (2015)
15. Atishay Bajaj Jain "Effect of Strong Ground Shaking on Dynamic Soil Properties" (2015)
16. Mohot Kumar Singh "Liquefaction Studies using CPT and CPTu" (2015)
17. Nilay Mohgaonkar "Dynamic Soil-Structure Interaction for Bridges" (2015)
18. Ritesh Kumar "Influence of Correlation Length of Random Soil Properties on Behaviour of Monopiles Subjected to Lateral Load" (2015)
19. Asif Raja, Title: "2-D Nonlinear Finite Element Analysis of Earthen Dam for Earthquake Loads" (2014)
20. Atul Singh, Title: "Seismic Slope Stability Analysis for Earthquake Induced Landslides" (2014)
21. Niraj K. Kumawat, Title: "Liquefaction Potential of IIT Roorkee Campus Based on CPT Resistance" (2014)
22. Rajiv Kumar, Title: "Application of Simplified Dynamic Soil-Structure Interaction", (2014)
23. Manendra Singh, Title "Effects of Liquefaction on Shallow Foundations" (2013)
24. Jai Singh Saini, Title "Modelling and Analysis of Hill Slopes" (2013)
25. Vijay Kumar, Title "Dynamic Soil-Structure Interaction for Nuclear Power Plant" (2013)
26. Satyapriya Senapati, Title "Liquefaction Resistance of Geogrid Reinforced Soil" (2012)
27. Prateek Khare, Title "2-D Finite Element Seismic Analysis of Earthen Rockfill Dam" (2012)
28. Saurabh Chaurasia, Title "Effects of Soil Amplification in Hilly Slopes" (2012)
29. Ganesh M. Pai, Title "Soil-Structure Interaction using Simplified Models" (2011)
30. Suresh S. Kale, Title "Dynamic Soil Properties of Soils under Cyclic Loading" (2010)
31. S.S. Choudhary, Title "Liquefaction Resistance of Soils under Cyclic Loading", (2010)
32. Madani Syed Nurussidyn , Title "Effect of Liquefaction on the Response of a Single Pile", (2009)

33. Shikhare Uday A., Title “Seismic Analysis of an Embankment Dam using Different Methods”, (2009)
34. Adarsh Kumar N.S., Title “Dynamic Analysis of Nailed Open Cuts”, (2009)
35. Kiran A.S., Title “Lateral Capacity of Piles in Liquefiable Soils”, (2009)
36. Partha J. Deka, Title “Effect of Soil-Structure Interaction on Seismic Response of Buildings”, (2008)
37. Malay K. Dutta, Title “Dynamic Analysis of Pile-Supported Foundation”, (2007)
38. Jayshankar B.S., Title “Analysis of Buried Pipeline Subject to Permanent Ground Deformation”, (2007)
39. Pachipulusu Anuradha, Title “Seismic Slope Stability Analysis of Embankments”, (2007)
40. Akhilesh K. Patel, Title: “Effects of Fines on Liquefaction Potential” (2006)
41. R. F. Dorage, Title: “FEM Analysis of Stress Distributions in Embankment of Earthen Dam” (2006)
42. Deepak A. Gunjagi, Title: “Filtration and Clogging Performance of Geotextiles”, (2006)
43. Utpal Kumar Nath, Title: “Pile-Soil Interaction in Liquefiable Soils”, (2006)
44. M. Venu, Title: “Linear and Nonlinear Dynamic Behavior of Layered Soil Stratum”, (2004 at BITS, Pilani)

**Publications (129):** Refereed Journals (42) + Conferences (87)

**International Journals (33)**

1. Syed N.M. and Maheshwari B.K. (2017), "Nonlinear SSI Analysis in Time Domain using coupled FEM-SBFEM for a soil-pile system", **Géotechnique**, Vol. 67, No. 7, pp. 572–580. [<http://dx.doi.org/10.1680/jgeot.16.P.029>]
2. Maheshwari B. K. and Kirar B. (2017), “Dynamic Properties of Soils at Low Strains in Roorkee Region using Resonant Column Tests.” *Int. J. of Geotechnical Eng.* doi: 10.1080/19386362.2017.1365474
3. Kirar B., Maheshwari B.K. and Muley P. (2016), "Correlation between Shear Wave Velocity ( $V_s$ ) and SPT Resistance (N) for Roorkee Region", **Int. J. of Geosynthetics and Ground Eng.**, Vol. 2, No. 1, pp. 1-11.
4. Maheshwari B.K. and Syed N.M. (2016), "Verification of Implementation of HiSS soil model in the coupled FEM-SBFEM SSI Analysis", **International Journal of Geomechanics, ASCE, DOI: 10.1061/(ASCE)GM.1943-5622.0000511**, Vol. 16, No. 1, pp. 04015034-1-8.
5. Muley P., Maheshwari B.K. and Paul D.K. (2015), "Liquefaction Potential of Roorkee Region using Field and Laboratory Tests", **Int. J. of Geosynthetics and Ground Engineering**, Vol. 1, No. 4, pp. 1-13.
6. Syed N.M. and Maheshwari B.K. (2015), "Improvement in the Computational Efficiency of the Coupled FEM-SBFEM approach for 3D Seismic SSI Analysis in the Time Domain", **Computers and Geotechnics**, Vol. 67, pp. 204-212.
7. Maheshwari B.K. and Emani P.K. (2015), “Three Dimensional Nonlinear Seismic Analysis of Pile Groups using FE-CIFECM coupling in Hybrid Domain and HiSS Plasticity Model", Published online **International Journal of Geomechanics, ASCE, DOI: 10.1061/(ASCE)GM.1943-5622.0000335**, Vol. 15, No. 3, pp. 04014055-1-12.
8. Syed N.M. and Maheshwari B.K. (2014), "Modeling using Coupled FEM-SBFEM for Three Dimensional Seismic SSI in Time Domain", **International Journal of Geomechanics, ASCE**, Vol. 14, No. 1, pp. 118-129.
9. Maheshwari, B.K., Singh, H.P. and Saran, S. (2013) "Closure to Effects of reinforcement on the liquefaction resistance of Solani sand", **J. of Geotechnical and Geoenvironmental Eng., ASCE**, Vol. 139, Issue 9, pp. 1634-1635.
10. Maheshwari B.K., Kale S.S. and Kaynia A.M. (2013) "Effects of Cyclic Loads on Dynamic Properties of Soils in the Ganga Basin ", **International J. of Geotechnical Engineering**, Vol. 7, No. 2, pp. 149-155.
11. Maheshwari B.K., Mahajan A.K., Sharma M.L., Paul D.K., Kaynia A.M. and Lindholm C. (2013) "Relationship between Shear Velocity and SPT Resistance for Sandy Soils in the Ganga Basin", **International J. of Geotechnical Engineering**, Vol. 7, No. 1, pp. 63-70.
12. Sharma M.L., Sinvhal A., Singh Y. and Maheshwari B.K. (2013). “Damage Survey Report for Sikkim Earthquake of 18 September 2011”, **Seismological Research Letters**, Vol. 84, No. 1, pp. 49-56.
13. Maheshwari B.K. and Sarkar R. (2012) “Effect of Soil Nonlinearity and Liquefaction on Seismic Response of Pile Groups” **International J. of Geotechnical Engineering**, Vol. 6, issue 4, pp. 497-506.
14. Maheshwari, B.K., Singh, H.P. and Saran, S. (2012) "Effects of reinforcement on the liquefaction resistance of Solani sand", **J. of Geotechnical and Geoenvironmental Eng., ASCE**, Vol. 138, Issue 7, pp. 831-840.

15. Sarkar R. and Maheshwari B.K. (2012) "Effect of Soil Nonlinearity and Liquefaction on Dynamic Stiffness of Pile Groups" **International J. of Geotechnical Engineering**, Vol. 6, issue 3, pp. 319-329.
16. Maheshwari B.K., Kale S.S. and Kaynia A.M. (2012) "Dynamic Properties of Solani Sand at Large Strains: A Parametric Study", **International J. of Geotechnical Engineering**, Vol. 6, issue 3, pp. 353-358.
17. Sarkar R. and Maheshwari B.K. (2012) "Effects of Separation on the Behavior of Soil-Pile Interaction in Liquefiable Soils", **International Journal of Geomechanics, ASCE**, Vol. 12, Issue 1, pp. 1-13.
18. Maheshwari B.K. and Sarkar R. (2011) "Seismic Behavior of Soil-Pile-Structure Interaction in Liquefiable Soils: Parametric Study", **International Journal of Geomechanics, ASCE**, Vol. 11, Issue 4, pp. 335-347.
19. Maheshwari B.K. and Patel A.K. (2010) "Effects of Non-Plastic Silts on Liquefaction Potential of Solani Sand", **Geotechnical and Geological Engineering**, Vol. 28, Issue 5, pp. 559-566.
20. Emani P.K. and Maheshwari B.K. (2010). "Effectiveness of Hybrid Methods in Analyzing Frequency-Dependent Systems with Limited Nonlinearity", **International Journal of Advanced Computing**, Vol. 2, Issue 2, pp. 60-67.
21. Singh H.P., Maheshwari B.K., Saran S. and Paul D.K. (2010), "Improvement in liquefaction resistance of pond ash using stone-sand columns", **International J. of Geotechnical Eng.**, Vol. 4, Issue 1, pp. 23-30.
22. Emani P.K. and Maheshwari B.K. (2009). "Dynamic Impedances of Pile Groups with Embedded Caps in Homogeneous Elastic Soils using CIFECM", **Soil Dynamics and Earthquake Engineering**, Vol. 29, issue 6, pp. 963-973.
23. Maheshwari B.K. and Watanabe H. (2009). "Seismic Analysis of Pile Foundations using Simplified Approaches", **International Journal of Geotechnical Eng.**, Vol. 3, Issue 3, pp. 387-404.
24. Maheshwari B.K., Gunjagi D.A. (2008) "Filtration and Clogging Behavior of Geotextiles with Roorkee Soils", **Geotechnical and Geological Engineering**, Vol. 26, pp. 101-107.
25. Maheshwari B.K., Sharma M.L. and Narayan J.P. (2006) "Geotechnical and Structural Damages on the Indian Coast due to Indian Ocean Tsunami of December 26, 2004", **Earthquake Spectra**, Vol. 22, No. S3, pp. 475-493.
26. Maheshwari B.K., Watanabe H. (2006) "Nonlinear Dynamic Behavior of Pile Foundations: Effects of Separation at the Soil-Pile Interface", **Soils and Foundations**, Japanese Geotechnical Society, Paper No. 3234, Vol. 46, No. 4, pp. 437-448.
27. Narayan, J.P., Sharma, M.L. and Maheshwari, B.K. (2006). "Tsunami Intensity Mapping Along the Coast of Tamilnadu (India) During the Deadliest Indian Ocean Tsunami of December 26, 2004", **Pure and Applied Geophysics**, Vol. 163, No. 7, pp. 1279-1304.
28. Maheshwari B.K. and Watanabe H. (2005). "Dynamic Analysis of Pile Foundations: Effects of Material Nonlinearity of Soil", **Electronic Journal of Geotechnical Engineering**, Vol. 10 (E), Paper No. 0585.
29. Narayan, J.P., Sharma, M.L. and Maheshwari, B.K. (2005). "Run-up and Inundation Pattern developed during the Indian Ocean Tsunami of December 26, 2004 along the Coast of Tamil Nadu (India)", **Gondwana Research** (Gondwana Newsletter Section), Vol. 8, No. 4, pp 611-616.
30. Narayan, J.P., Sharma, M.L. and Maheshwari, B.K. (2005). "Effects of Medu and Coastal Topography on the Damage Pattern during the Recent Indian Ocean Tsunami along the Coast of Tamil Nadu", **Science of Tsunami Hazards**, Vol. 23, No. 2, pp 9-18.
31. Maheshwari B.K., Truman K.Z., Gould P.L., El Naggar M.H. (2005) "Three-Dimensional Nonlinear Seismic Analysis of Single Piles using FEM: Effects of Plasticity of Soil", **International Journal of Geomechanics, ASCE**, Vol. 5, No. 1, pp. 35-44.
32. Maheshwari B.K., Truman K.Z., El Naggar M.H., Gould P.L. (2004). "Three-dimensional Finite Element Nonlinear Dynamic Analysis of Pile Groups for Lateral Transient and Seismic Excitations", **Canadian Geotechnical Journal**, Vol. 41, pp. 118-133.
33. Maheshwari B.K., Truman K.Z., El Naggar M.H., Gould P.L. (2004). "3-D Nonlinear Analysis for Seismic Soil-Pile-Structure Interaction", **Soil Dynamics and Earthquake Engineering**, Vol. 24, No. 4, pp. 345-358.

#### **National Journals (9)**

1. Sangeeta and Maheshwari B.K. (2018), "Earthquake Induced Landslide Hazard Assessment of Chamoli District, Uttarakhand, India Using Relative Frequency Ratio Method", **Indian Geotechnical Journal**. doi: 10.1007/s40098-018-0334-2.

2. Kirar B. and Maheshwari B.K. (2017), "Dynamic Properties of Soils at Large Strains in Roorkee Region using Field and Laboratory Tests." *Indian Geotechnical Journal*. doi: 10.1007/s40098-017-0258-2.
3. Sarkar R., Bhattacharya S. and Maheshwari B.K. (2014), "Seismic Requalification of Pile Foundations in Liquefiable Soils" *Indian Geotechnical Journal*, Vol. 44, No. 2, pp. 183-195.
4. Sarkar R. and Maheshwari B.K. (2014), "Three Dimensional Nonlinear Seismic Behaviour of 3 x 3 Pile Groups in Liquefiable Soil," *Indian Geotechnical Journal*, Vol. 44, No. 1, pp. 68-76.
5. Maheshwari B.K., Sharma M.L., Singh Y. and Sinvhal A. (2013). "Geotechnical Aspects of Sikkim Earthquake of September 2011", *Indian Geotechnical Journal*, Vol. 43, No. 2, pp. 170-179.
6. Senapati S. and Maheshwari B.K. (2012). "Effects of Geogrid on Dynamic Strength Characteristics of Solani Sand", *Indian Geotechnical Journal*, Vol. 42, No. 4, pp. 287-293.
7. Maheshwari B.K., Nath U.K., Ramasamy G. (2008). "Influence of Liquefaction on Pile-Soil Interaction in Vertical Vibration", *ISET Journal of Earthquake Technology*, Paper No. 494, Vol. 45, No. 1-2, pp. 1-12.
8. Maheshwari B.K., Sharma M.L., Narayan J.P. (2005). "Structural Damages on the Coast of Tamil Nadu due to Tsunamis caused by December 26, 2004 Sumatra Earthquake", *ISET Journal of Earthquake Technology*, Paper No. 456, Vol. 42, No. 2-3, pp. 63-78.
9. Maheshwari B.K., Truman K.Z., El Naggar M.H. (2003). "Nonlinear Time Domain Analysis of Single Piles by FEM", *Indian Geotechnical Journal*, Vol. 33, No. 4, pp. 347-374.

#### **Publications: International Conferences (46)**

1. Sangeeta and Maheshwari B.K. (2018), " Earthquake Induced Landslide Hazard Assessment of Chamoli District, Uttarakhand, India Using Weighted Overlay Method", Proc. of 16<sup>th</sup> European Conference on Earthquake Engineering, held at Thessaloniki, Greece, June 2018.
2. Maheshwari B.K. (2017), "Disaster Management in India and Characterization for Geohazards", Proc. of 3<sup>rd</sup> Indo-Japan Workshop on Geotechnics for Natural Disaster Mitigation and Management held at IIT Guwahati, December 13, 2017.
3. Kirar B. and Maheshwari B.K. (2017), "Dynamic Properties of Solani Sand at Small Strains using Resonant Column Apparatus" Proc. of 16<sup>th</sup> World Conference on Earthquake Engineering, Santiago, Chile, Jan. 2017.
4. Maheshwari B.K. (2016), "Recent Advances in Nonlinear Soil-Structure Interaction for Earthquake Loads", Proc. of 6<sup>th</sup> Int. Conference on Recent Advances in Geotechnical Earthquake Engineering, GNEC, IITR, Noida, August 2017.
5. Sangeeta and Maheshwari B.K. (2016), "Landslide Hazard Assessment with Reference to 2003 Varunavat Landslide", Proc. of 6<sup>th</sup> Int. Conference on Recent Advances in Geotechnical Earthquake Engineering, GNEC, IITR, Noida, August 2016.
6. Maheshwari B.K. and Kaynia A.M. (2015), "Mitigation of Landslides in Uttarakhand through Seismic Slope Stability Analysis (Extended Abstract)", Proc. of International Conference on Disaster Management (IDRiM-2015) held in New Delhi, October 28-30, 2015.
7. Maheshwari B.K., Muley P., Kirar B. and Pail D.K. (2015), "Comparison of Different Methods for Evaluating the Liquefaction Potential of Roorkee Region", Proc. of International Conference on Disaster Management (IDRiM-2015) held in New Delhi, October 28-30, 2015.
8. Kumar Ritesh and Maheshwari B.K. (2015), "Soil Parametric Study on Behaviour of Monopile", Proc. of International Conference on Disaster Management (IDRiM-2015) held in New Delhi, October 28-30, 2015.
9. Bhaduri A. and Maheshwari B.K. (2015), "Seismic Slope Stability Analysis Using DEM and Predictive Displacement Models", Proc. of International Conference on Disaster Management (IDRiM-2015) held in New Delhi, October 28-30, 2015.
10. Petshali M. and Maheshwari B.K. (2015), "Evaluation of Liquefaction Resistance Using Different Methods for Disaster Mitigation", Proc. of International Conference on Disaster Management (IDRiM-2015) held in New Delhi, October 28-30, 2015.
11. Verma S. and Maheshwari B.K. (2015), "Ground Improvement using Stone Columns for Disaster Mitigation", Proc. of International Conference on Disaster Management (IDRiM-2015) held in New Delhi, October 28-30, 2015.
12. Sindhe N. Shrimal D. and Maheshwari B.K. (2015), "Role of Local Site Conditions in Disaster Mitigation", Proc. of International Conference on Disaster Management (IDRiM-2015) held in New Delhi, October 28-30, 2015.

13. Syed N.M. and Maheshwari B.K., "Verification of Numerical Modeling for Nonlinear Seismic Analysis of a Structure Considering Liquefaction", Proc. of 14<sup>th</sup> International Conference of the International Association for Computer Methods and Advances in Geomechanics, Kyoto, Japan, September 2014.
14. Syed N.M. and Maheshwari B.K., "Nonlinear Dynamic SSI Analysis with coupled FEM-SBFEM Approach", Proc. of 15<sup>th</sup> World Conference on Earthquake Engineering, Lisbon, Portugal, September 2012.
15. Kirar B., Maheshwari B.K. and Jakka R.S., "Dynamic Properties of Solani Sand Reinforced with Coir Fibers", Proc. of 15<sup>th</sup> World Conference on Earthquake Engineering, Lisbon, Portugal, September 2012.
16. Muley P., Maheshwari B.K. and Paul D.K., "Effect of Fines on Liquefaction Resistance of Solani Sand", Proc. of 15<sup>th</sup> World Conference on Earthquake Engineering, Lisbon, Portugal, September 2012.
17. Sharma M.L., Maheshwari B.K., Singh Y. and Sinvhal A., "Damage Pattern during Sikkim, India Earthquake of September 18, 2011", Proc. of 15<sup>th</sup> World Conference on Earthquake Engineering, Lisbon, Portugal, September 2012.
18. Maheshwari B.K. and Syed N.M. , "Three Dimensional Seismic Soil-Structure Interaction Analysis using Coupled FEM-SBFEM Approach", Proc. of 4<sup>th</sup> International Conference on Structural Stability and Dynamics, MNIT, Jaipur, January 2012.
19. Maheshwari B.K., "Advances in Soil-Structure Interaction Studies", Proc. of Post-SMiRT-21 Conference Seminar on Advances in Seismic Design of Structures, Systems and Components of Nuclear Facilities, NPCI, BARC, Mumbai, India, November 2011.
20. Maheshwari B.K. and Syed N.M. , "Modeling of Boundary using SBFEM for Nonlinear SSI Analysis of Nuclear Power Plants", Transactions, 21<sup>st</sup> International Conference on Structural Mechanics in Reactor Technology (SMiRT-21) New Delhi, India, November 2011.
21. Syed N.M. and Maheshwari B.K., "Dynamic Soil-Structure Interaction Analysis using Coupled FEM-SBFEM Approach", Proc. of the 13<sup>th</sup> International Conference of the International Association for Computer Methods and Advances in Geomechanics, Melbourne, Australia, May 2011.
22. Maheshwari B.K. and Sarkar Rajib, "Behaviour of a Pile Supported Structure under Strong Ground Motion considering Liquefaction of the Soil Medium", Proc. of 9<sup>th</sup> U.S. National and 10<sup>th</sup> Canadian Conference on Earthquake Engineering, Toronto, Canada, July 2010.
23. Saran Swami, Maheshwari B.K. and Singh H.P., "Liquefaction Studies of the Solani Sand Reinforced with Geogrid", Proc. of 5<sup>th</sup> International Conference on Recent Advances in Geotechnical Earthquake Eng. and Soil Dynamics, San Diego, CA, USA, May 2010.
24. Maheshwari B.K. and Emani P.K., "Effect of Nonlinearity on the Dynamic Behavior of Pile groups", Proc. of 14<sup>th</sup> World Conference on Earthquake Eng., Beijing, China, October 2008.
25. Sarkar Rajib and Maheshwari B.K., "Influence of Soil Nonlinearity and Liquefaction on the Seismic Response of Pile Groups", Proc. of 14<sup>th</sup> World Conference on Earthquake Eng., Beijing, China, October 2008.
26. Singh H.P., Maheshwari B.K., Saran S. and Paul D.K., "Evaluation of Liquefaction Potential of Pond Ash", Proc. of 14<sup>th</sup> World Conference on Earthquake Eng., Beijing, China, October 2008.
27. Maheshwari B.K., Kaynia A.M. and Paul D.K., "Liquefaction Susceptibility of Soils in Himalayan Region", Proc. of 14<sup>th</sup> World Conference on Earthquake Eng., Beijing, China, October 2008.
28. Emani P.K. and Maheshwari B.K., "Nonlinear SSI Analysis of Pile groups using Hybrid Domain Method", Proc. of 12<sup>th</sup> Int. Conference of IACMAG, Goa, India, October 2008.
29. Sarkar Rajib and Maheshwari B.K., "Three-Dimensional Seismic Analysis of Pile Groups", Proc. of 12<sup>th</sup> Int. Conference of IACMAG, Goa, India, October 2008.
30. Singh H.P., Maheshwari B.K. and Saran S., "Liquefaction Behavior of the Solani Sand using Small Shake Table", Proc. of 12<sup>th</sup> Int. Conf. of IACMAG, Goa, India, October 2008.
31. Maheshwari B.K. and P. Anuradha "Stress Distributions in Earth and Rockfill Dams" Proc. of the International Workshop on Earthquake Hazards & Mitigation held at Dept. of Civil Engineering, IIT Guwahati, December 2007.
32. Maheshwari B.K., Nath U.K. and Ramasamy G. "Soil-Pile Interaction in Liquefied Soil", Proc. of the 2<sup>nd</sup> International Congress on Computational Mechanics and Simulation, IIT Guwahati, India, December 2006.
33. Emani P. K. and Maheshwari B.K. "Nonlinear Soil-Structure Interaction Analysis of Bridge Substructure using Consistent Infinitesimal Finite-Element Cell Method", Proc. of 1<sup>st</sup> European Conf. on Earthquake Eng and Seismology, Geneva, Switzerland, Sept. 2006.
34. Maheshwari B.K., Sharma M.L., Narayan J.P. "Geotechnical Damages on the Indian Coastline due to Tsunamis caused by December 26, 2004 Sumatra Earthquake", Proceedings of 8<sup>th</sup> U.S. National Conference on Earthquake Engineering, San Francisco, CA, April 2006.

35. Nath U.K., Maheshwari B.K. and Ramasamy G. "Pile-Soil Interaction due to Seismic Excitation", Proceedings of the International Conference on Earthquake Engineering, SoCE, Deemed University Thanjavur, Tamil Nadu, India, February 2006.
36. Maheshwari B.K., "Linear and Nonlinear Seismic Analysis of Layered Soil Stratum", Proceedings of 16<sup>th</sup> International Conference on Soil Mechanics and Geotechnical Engineering, Osaka, Japan, September 2005.
37. Maheshwari B.K., Truman K.Z., "3-D Finite Element Nonlinear Dynamic Analysis for Soil-Pile-Structure Interaction", Proc. of 13<sup>th</sup> World Conference on Earthquake Eng., Vancouver, B.C., Canada, August 2004.
38. Maheshwari B.K., Truman K.Z., "Nonlinear Dynamic Behavior of Pile Groups: Effects of Plasticity of Soil", Proc. of 5<sup>th</sup> International Conference on Case Histories in Geotechnical Eng., New York, April 2004.
39. Maheshwari B.K., "Effects of Plasticity on the Dynamic Behavior of Single Piles", Proceedings of 15<sup>th</sup> S.E. Asian Geotechnical Conference, Bang Kong, Thailand, November 2004.
40. Maheshwari B.K., Truman K.Z., Gould P.L., "Nonlinear Kinematic Response of Single Piles", CD-ROM Proceedings of 7<sup>th</sup> U.S. National Conference on Earthquake Engineering, Boston MA, July 2002.
41. Maheshwari B.K., Truman K.Z., Gould P.L., "Application of Nonlinear Constitutive Model of Soil in Dynamic Soil-Pile Interaction using Finite Element Technique." Proc. of 2<sup>nd</sup> International Conference on Theoretical, Applied, Computational and Experimental Mechanics, IIT Kharagpur, India, December 2001.
42. Maheshwari B.K., Truman K.Z., Gould P.L., "Effect of Plasticity of Soil on Nonlinear Dynamic Analysis of Pile Groups." Proc. of the 10<sup>th</sup> Int. Conf. on Soil Dynamics and Earthquake Eng., Philadelphia, Oct. 2001.
43. Maheshwari B.K., Truman K.Z., Gould P.L., "Effect of Plasticity of Soil on Seismic Response of Pile Foundation: Parametric Study." Proceedings of the 4<sup>th</sup> International Conference on Recent Advances in Geotechnical Earthquake Engineering and Soil Dynamics, San Diego, CA, March 2001.
44. Maheshwari B.K., Truman K.Z., Gould P.L., "Nonlinear Dynamic Analysis of Pile Foundation: Effect of Plasticity of Soil." Proc. of the 10<sup>th</sup> Int. Conference of IACMAG, Tucson, Arizona, Jan. 2001.
45. Maheshwari B.K., Watanabe, H., "Nonlinear Dynamic Analysis of Pile Foundation: Effect of Separation at the Soil-Pile Interface." Proceedings of the 12<sup>th</sup> World Conference on Earthquake Engineering, Auckland, New Zealand, Jan.-Feb. 2000.
46. Maheshwari B.K., Watanabe, H., "Nonlinear Seismic Analysis of Pile Foundation." Proceedings of the 11<sup>th</sup> European Conference on Earthquake Engineering, Paris, France, Sept. 1998.

**Publications: National Conferences (41)**

1. Sangeeta and Maheshwari B.K., "Evaluation of Permanent Displacement for Earthquake Induced Landslides" Proc. of the Indian Geotechnical Conference, IIT Guwahati, December 2017.
2. Kanth A. and Maheshwari B.K., "Effect of Frequency of Loading on Pore Pressure in Solani Sand" Proc. of the Indian Geotechnical Conference, IIT Guwahati, December 2017.
3. Shrimal D. and Maheshwari B.K., "Effect of Liquefaction on the Response of a Single Pile under Seismic Loading" Proc. of the Indian Geotechnical Conference, IIT Madras, Chennai, December 2016.
4. Bhaduri A. and Maheshwari B.K., "Effects of Discontinuities on Rock Slope" Proc. of the Indian Geotechnical Conference, IIT Madras, Chennai, December 2016.
5. Maheshwari B.K., "Recent Advances in Seismic Soil-Structure Interaction" Plenary Lecture, Proc. of the Indian Geotechnical Conference, Kakinada, December 2014.
6. Singh A. and Maheshwari B.K., "Geodynamic Tests for Landslide Studies" Proc. of the Indian Geotechnical Conference, Kakinada, December 2014.
7. Raja M.A. and Maheshwari B.K., "Effect of Nonlinearity on Dynamic Response of Earthen Dam" Proc. of the Indian Geotechnical Conference, Kakinada, December 2014.
8. Kumar R. and Maheshwari B.K., "Simplified Models for Dynamic Soil-Structure Interaction" Proc. of the Indian Geotechnical Conference, Kakinada, December 2014.
9. Kumawat N.K. and Maheshwari B.K., "Liquefaction Potential of IITR Campus, using CPT and Piezocones" Proc. of the Indian Geotechnical Conference, Kakinada, December 2014.
10. Gupta I.D. and Maheshwari B.K., "Response of Simple Symmetric Buildings to Torsional Excitation-Rationalization of Accidental Eccentricity", Proc. of the 15<sup>th</sup> Symposium on Earthquake Engineering, IIT Roorkee, Roorkee, December 2014.
11. Saini J.S., Maheshwari B.K. and Gupta V., "Effect of Joint Strength Parameters on Stability of Rock Slope", Proc. of the Indian Geotechnical Conference, IIT Roorkee, December 2013.
12. Singh M. and Maheshwari B.K., "Effect of Un-liquefiable Sand Layer on Shallow Foundation", Proc. of the Indian Geotechnical Conference, IIT Roorkee, December 2013.
13. Kumar V. and Maheshwari B.K., "FE Modelling of NPP for Dynamic Loads considering SSI", Proc. of the Indian Geotechnical Conference, IIT Roorkee, December 2013.

14. Khare P. and Maheshwari B.K., "2 D Finite Element Seismic Analysis of an Earthen Rock-fill Dam", Proc. of the Indian Geotechnical Conference, IIT Delhi, December 2012, Paper No. F 625.
15. Sinvhal A., Sharma M.L., Singh Y. and Maheshwari B.K., "A Brief Report on Damage Survey for Sikkim Earthquake of 2011", Proc. of the ISET Golden Jubilee Symposium, IIT Roorkee, October 2012.
16. Pai G. and Maheshwari B.K., "Soil-Structure Interaction using a Simplified Model: Parametric Study", Proc. of the Indian Geotechnical Conference, Kochi, Kerala, December 2011
17. Syed N.M. and Maheshwari B.K., "Modeling of Boundary for SSI Analysis using SBFEM", Proc. of the 14<sup>th</sup> Symposium on Earthquake Engineering, IIT Roorkee, Roorkee, December 2010.
18. Singh H.P., Maheshwari B.K. and Saran S., "Effects of Amplitude, Frequency and Relative Density on Liquefaction Resistance of Sand", Proc. of the 14<sup>th</sup> Symposium on Earthquake Engineering, IIT Roorkee, Roorkee, December 2010.
19. Kale S.S., Maheshwari B.K. and Kaynia A.M., "Dynamic Properties of Solani Sand under Cyclic Loads", Proc. of the 14<sup>th</sup> Symposium on Earthquake Engineering, IIT Roorkee, Roorkee, December 2010.
20. Bhasin R., Erduran E., Galiana-Merino J.J., Kaynia A.M., Lang D.H., Mahajan A.K., Maheshwari B.K., Mundepi A.K., Paul D.K., Sharma M.L. and Singh Y., "The Indo-Norwegian Institutional Cooperation on Earthquake Risk Reduction", Proc. of the 14<sup>th</sup> Symposium on Earthquake Engineering, IIT Roorkee, Roorkee, December 2010.
21. Emani P.K. and Maheshwari B.K., "Dynamic Pile-Cap-Soil-Pile Interactions in Triangular Pile Groups", Proc. of the Indian Geotechnical Conference, IIT Bombay, Mumbai, December 2010.
22. Syed N.M. and Maheshwari B.K., "Evaluation of DSC Parameters for Solani Sand", Proc. of the Indian Geotechnical Conference, IIT Bombay, Mumbai, December 2010.
23. Choudhary S.S., Maheshwari B.K. and Kaynia A.M., "Liquefaction Resistance of Solani Sand under Cyclic Loads", Proc. of the Indian Geotechnical Conference, IIT Bombay, Mumbai, December 2010.
24. Shikhare U.A., Maheshwari B.K. and Paul D.K., "Seismic Analysis of an Embankment using Different Techniques", Proc. of the Indian Geotechnical Conference, Guntur, Andhra Pradesh, Feb. 2010.
25. Kiran A.S., Ramasamy G. and Maheshwari B.K., "Lateral Capacity of Piles in Liquefiable Soils", Proc. of the Indian Geotechnical Conference, Guntur, Andhra Pradesh, Feb. 2010.
26. Syed N.M., Maheshwari B.K. and Kaynia A.M., "Numerical Modeling of Liquefaction using Simple Constitutive Models", Proc. of the National Conference on Advances in Concrete, Structures and Geotechnical Engineering (ACSGE-09), BITS Pilani, Rajasthan, India, October 2009.
27. Anuradha P. and Maheshwari B.K., "Seismic Slope Stability Analysis of Earth and Rockfill Dams" Proc. of the Landslide Management, Diamond Jubilee Conference, CBRI, Roorkee, February 2008.
28. Dutta M.K. and Maheshwari B.K. "Dynamic Analysis of Pile Supported Frame Foundation: Impedance Functions", Proc. of the National Conference on Foundations and Retaining Structures, held at Dept. of Civil Engineering, IIT Roorkee, May 2007.
29. Maheshwari B.K., Sharma M.L. and Narayan J.P. (2004), "Damage to Ports and Lifelines in Tamil Nadu due to Indian Ocean Tsunamis of December 2004", 1<sup>st</sup> India Disaster Management Congress, New Delhi.
30. Patel A.K. and Maheshwari B.K. "Behavior of Sand-Silt Mixture during Liquefaction", Proc. of the Indian Geotechnical Conference -06, IIT Madras, Chennai, India, December 2006.
31. Emani P.K. and Maheshwari B.K. "SSI Analysis of Pile Foundation using Frequency-Time Domain Hybrid Method", Proc. of the 13<sup>th</sup> Symposium on Earthquake Engineering, IIT Roorkee, Roorkee, December 2006.
32. Sarkar R. and Maheshwari B.K. "Evaluation of Seismic Ground Response in DEQ Campus of IIT Roorkee using SASW Test", Proc. of the 13<sup>th</sup> Symposium on Earthquake Engineering, IIT Roorkee, December 2006.
33. Sarkar R., Maheshwari B.K. and Singh H.P. "Evaluation of Liquefaction Potential of Soil in DEQ Campus of IIT Roorkee", Proc. of the 13<sup>th</sup> Symposium on Earthquake Engineering, IIT Roorkee, December 2006.
34. Jayashankar B.S. and Maheshwari B.K. "Study of Dynamic Soil Properties Using a Small Geotechnical Centrifuge: A review", Proc. of the 13<sup>th</sup> Symposium on Earthquake Eng, IIT Roorkee, December 2006.
35. Emani Pavan K. and Maheshwari B.K. "Evaluation of Free-Field Seismic Response of Nonlinear Soil Layers for Bridges", Proceedings of the National Conference on Advances in Bridge Engineering, IIT Roorkee, Roorkee, March 2006.
36. Nath U.K., Maheshwari B.K. and Ramasamy G. "Pile-Soil Modeling Considering Liquefaction – An Overview", Proceedings of the National Conference on Advances in Bridge Engineering, IIT Roorkee, Roorkee, March 2006.
37. Maheshwari B.K., Sharma M.L., Narayan J.P. (2005). "Geotechnical Damages on the Indian Coastline due to Tsunamis caused by December 26, 2004 Sumatra Earthquake", Proc. of Symposium on Seismic Hazard Analysis and Microzonation, IIT Roorkee, September 2005.

38. Maheshwari B.K., Truman K.Z., "Nonlinear Seismic Analysis of Structures Supported on Pile Foundations", Proc. of second conference on Disaster Management Case Histories, BITS, Pilani, India, November 2003.
39. Maheshwari B.K., Watanabe, H., "Effect of Material Damping of Soil on Dynamic Behavior of Pile Foundation." Proceedings of the 53<sup>rd</sup> Annual Conference of JSCE, Kobe, Japan, Oct. 1998.
40. Maheshwari B.K., Watanabe, H., "Nonlinear Dynamic Analysis of Pile Foundation." Proceedings of the 24<sup>th</sup> JSCE Earthquake Engineering Symposium, Kobe, Japan, July 1997.
41. Maheshwari B.K., Watanabe, H., "A Model to Study Projectile Penetration in Soils." Proceedings of the 50<sup>th</sup> Annual Conference of JSCE, Matsuyama, Japan, Sept. 1995.

### Patents / Technology Transfer

Following 2 patents are filed and successfully completed the first stage and are in further processing

1. A method for Improving the strength of pond ash deposits. Application number: **142/DEL/2010 dated 25-01-2010**
2. A method for Improving the liquefaction resistance of pond ash deposits. Application number: **840/DEL/2010 dated 06-04-2010**

Group Members: D.K. Paul, **B.K. Maheshwari**, Swami Saran, H.P. Singh, S. Mukerjee, M.L. Sharma, Subodh Jain and N.P. Aterkar

### Research Reports

1. Maheshwari B.K., "Three-Dimensional Finite Element Nonlinear Dynamic Analyses for Soil-Pile-Structure Interaction in the Time Domain", Research Report Submitted to Mid America Earthquake Center (NSF), Dept. of Civil Engineering, Washington University, St. Louis, Missouri, March 2003.
2. Maheshwari B.K., "Behavior of Pile-Supported Structures during Strong Ground motions: Effects of 3-D Nonlinear Soil-Pile-Structure interaction", Research Report Submitted to Engineering Sciences Division, SERC, DST, New Delhi, Project No. SR/S3/MERC/31/2005, Completion Report, February 2010.
3. Maheshwari B.K., "Earthquake Risk Reduction in Himalaya with Institutional Cooperation between India and Norway: Ground Stability Assessment", Research Report Submitted to Royal Embassy of Norway, New Delhi, Project Completion Report, July 2010.
4. Maheshwari B.K., "Dynamic Properties and Liquefaction Resistance of Soils using Cyclic Triaxial Test", Research Report Submitted to Seismology Division, Ministry of Earth Sciences, New Delhi, Project No. MoES/P.O.(Seismo)/23(629)/2006, Completion Report, December 2012.

### Administrative Positions Held

- Head, Centre of Excellence in Disaster Mitigation and Management, IIT Roorkee (Feb. 2015~Feb. 2018)
- O.C. Soil Dynamics Laboratory, EQD, since July 2005 ~ Present
- O.C., Annual Reports, Department Information, EQD, since January 2013
- Faculty Advisor for Dept. of Earthquake Engineering Cognizance 2011
- Member of Departmental Research Committee
- Member of Dept. Academic Studies Committee
- Member, Institute Academic Programme Committee (IAPC), January 2011- August 2014
- Institute Representative for JEE and GATE

### Awards

- **IACMAG** Award of "**Excellent Regional Contributions**" presented during 14<sup>th</sup> Int. Conference of the International Association for Computer Methods & Advances in Geomechanics, Kyoto, Japan, Sept. 2014
- **Shamsher Prakash Research Award 2009** of IIT Roorkee with citation and cash prize of Rs. 50,000
- Qualified and Awarded EIT by Ohio State Board (2000), USA
- Monbusho (Japanese Govt.) scholarship for doctoral research (1994-1997).
- Gold Medal for first rank in M.E. from University of Roorkee (1994).
- University Grant Commission Fellowship (GATE) for M.E. course (1992-1994).
- Selected for Dr. K.S. Krishnan Senior Research Fellowship by Bhabha Atomic Research Center (1994).

## Memberships

- Member, American Society of Civil Engineers (ASCE)
- Member, Earthquake Engineering Research Institute (EERI), USA
- Member, International Society of Soil Mechanics and Geotechnical Engineering (ISSMGE)
- Life Fellow, Indian Society of Earthquake Technology (ISET)
- Life Member, Indian Geotechnical Society (IGS)
- Life Member, The Institution of Engineers (India)
- Ex-Member, Japan Society of Civil Engineers (JSCE)

## Editorship, Peer Reviewer, Committee Member

**Associate Editor**, International Journal of Geomechanics, ASCE, since February 2015

**Expert Member** identified by Earthquake Engineering Sectional Committee, **CEC 39**, of Bureau of Indian Standards (**BIS**), New Delhi, since June 25, 2013.

**Nominated Member** of Following 4 Committees of **Indian Road Congress (IRC)** for 3 year period (2018-2021)

BSS (Apex): Bridge Specifications and Standards Committee

B-3: Foundation, Sub-Structure, Protective Works and Masonry Structures Committee

H-4: Embankment, Ground Improvement and Drainage Committee

G-6: Disaster Management Committee

**Editor**, ISET Journal of Earthquake Technology (April 2013 to March 2017)

**Member, Editorial Board**, International Journal of Geotechnical Engineering, Maney Publishing, U.K., January 2013 to December 2015

**Member, Editorial Board**, Indian Geotechnical Journal (Springer) published by IGS since February 2012

**Co-Editor**, Indian Society of Earthquake Technology (ISET), April 2005 ~ March 2007

**Secretary**, Indian Society of Earthquake Technology (ISET), April 2007 ~ March 2011

## Reviewer for Following Journals

- Earthquake Engineering and Structural Dynamics
- Soil Dynamics and Earthquake Engineering
- International Journal of Geomechanics, ASCE
- Earthquake Engineering and Engineering Vibration
- International Journal of Geotechnical Engineering
- Indian Geotechnical Journal
- Journal of Engineering Structures
- Journal of Earth System Sciences
- Structural Engineering and Mechanics, Korea
- Natural Hazards
- Sadhana - Academy Proceedings in Engineering Science
- Computers & Geotechnics – An International Journal, Elsevier.
- Institution of Engineers (India), Civil Eng. Journal

## Sponsored Research Projects (6) – Externally Funded

1. Working as a P.I. on Seismology Division, Ministry of Earth Sciences, Govt. of India sponsored research project entitled “Dynamic Properties of Soils using Resonant Column Tests”, duration 3 years, total outlay of the project: **Rs. 16.6 Lacs**. Started October 2014.
2. Completed as a **Co-P.I.** a cooperative research project between IIT Roorkee and Norway, sponsored by Royal Norwegian Embassy in India, project entitled “Seismic Risk and Loss Assessment in Hilly Areas”, duration four years, total outlay of the project: about **Rs. 104 Lacs**, started Jan. 11, 2012, P.I. Dr. Y. Singh, DEQ, IIT Roorkee. NGI counterparts: Dr. Rajendra Bhasin and Dr. Amir M. Kaynia. Visited Norwegian Geotechnical

Institute , Oslo, Norway for 11 days in Oct.-Nov. 2013 and for another 11 days in November 2014 for joint research work on this project.

3. Completed as a **P.I.**, Seismology Division, Ministry of Earth Sciences, Govt. of India sponsored project entitled “Dynamic Properties and Liquefaction Resistance of Soils using Cyclic Triaxial Tests”, duration 3 years, total outlay of the project: **Rs. 64 Lacs**, started from January 2008, completed in June 2012.. Procured an Advanced Cyclic Triaxial System in Dept. of Earthquake Eng., IIT Roorkee from U.K.
4. Completed as a **Co-P.I.** on a cooperative research agreement between IIT Roorkee and Norway, sponsored by Royal Norwegian Embassy in India, project entitled “Earthquake Risk Reduction in Himalaya with Institutional Cooperation between India and Norway”, duration four years, total outlay of the project: about **Rs. 44 Lacs**, started Jan. 11, 2007, completed in December 2010, P.I. Prof. D.K. Paul, DEQ, IIT Roorkee. Visited Norwegian Geotechnical Institute (NGI), Oslo, Norway for 10 days in September 2007 and for 9 days in November 2009 for joint research work on this project, NGI counterpart: Dr. Amir M. Kaynia.
5. Completed as a **P.I.** on Engineering Science Division, SERC, Department of Science and Technology, Govt. of India sponsored project entitled “Behavior of Pile-Supported Structures during Strong Ground Motions. Effects of 3-D Nonlinear Soil-Pile Structure Interaction”, duration 3.5 years, total outlay of the project: **Rs. 11.62 Lacs**, started on April 28, 2006, one Ph.D. student was supported from this project who have been awarded the degree. Project is successfully completed in October 2009.
6. Completed as a **Post-Doctoral Researcher** on a Mid-America Earthquake Center and U.S. Army Corps of Engineers sponsored project entitled “Performance of Lock Structures (Soil-Pile-Structure Interaction)”, duration 3.5 years, total outlay **US\$ 1,20,000** completed (Oct. 1999 to March 2003), P.I. Prof. Kevin Z. Truman, Chair, Dept. of Civil Engineering, Washington University, St. Louis, USA.

#### Short Term Courses, Conferences Organized

- Organizing Secretary, 16<sup>th</sup> Symposium on Earthquake Engineering (16SEE) held at IIT Roorkee during December 20-22, 2018.
- Coordinator, Three Short term Courses on "Enterprises Risk Management (ERM)", held at IIT Roorkee, Sponsored by THDC India Pvt. Ltd. Rishikesh. Module-1: Aug. 31 ~ Sept. 4, 2015; Module-2: Oct. 13-17, 2015; Module-3: Feb. 29 ~ March 4, 2016.
- Co-Chairman, National Workshop on Assessment and Mitigation of Liquefaction Hazards for Seismic Microzonation, Organized by ISET in association with DEQ and CoEDMM at IIT Roorkee, Nov. 27-28, 2015
- Coordinator, AICTE sponsored Short Term Course on “Geotechnical-Earthquake Engineering” held at IIT Roorkee, June 2-6, 2014
- Coordinator PAMC Review Meeting of SERC Division, DST, Govt. of India, IIT Roorkee, April 15, 2009
- Conference Secretary, 12<sup>th</sup> International Conference of the IACMAG held in Goa, India, October 1-6, 2008
- Joint Organizing Secretary, National Conference on “Advances in Bridge Engineering” held at IIT Roorkee, March 24-25, 2006
- Coordinator, AICTE sponsored Short Term Course on “Geotechnical-Earthquake Engineering” held at IIT Roorkee, December 11-15, 2006
- Coordinator, NPEEE Short Term Course on “Geotechnical-Earthquake Engineering” held at IIT Roorkee, May 29 ~ June 3, 2006
- Coordinator, NPEEE Short Term Course on “Geotechnical-Earthquake Engineering” held at IIT Roorkee, August 29 ~ September 3, 2005

#### Recent Major Conferences Attended and/or Presentations Delivered

1. Attended the meetings of **G-6 Committee** (Disaster Management) and **B-3 Committee** (Foundation, Sub-Structure, Protective Works and Masonry Structures) as a member at Indian Road Congress, New Delhi, July 27-28, 2018.
2. **Chaired a Session** on Geotechnical Earthquake Engineering during 16<sup>th</sup> European Conference on Earthquake Engineering, held at Thessaloniki, Greece, June 18-21, 2018.
3. Visited Dept. of Civil Engineering, IISc Bangalore to **examine one Ph.D. Thesis** on May 1, 2018.
4. Attended the meeting of Bridge Specifications and Standards (**BSS**) **Apex Committee** as a member at Indian Road Congress, New Delhi, April 25, 2018.
5. Attended a meeting as a member of CED39 (Earthquake Engineering Section) of Bureau of Indian Standards (**BIS**) at New Delhi on April 13, 2018.

6. Invited to deliver a **Keynote Lecture** in National Symposium on Disaster Mitigation and Management at DIT University, Dehradun on April 12, 2018.
7. Visited IIT (ISM) Dhabad to attend the invited meeting of Board of Courses and Studies (**BOCS**) as an external member on March 10, 2018.
8. Attended the meeting of **B-3 Committee** (Foundation, Sub-Structure, Protective Works and Masonry Structures) as a member at Indian Road Congress, New Delhi, Feb. 24, 2018.
9. Invited to deliver a **Two Lectures** on Disaster Management and Geotech EQ Eng. at DIT University, Dehradun on December 29, 2017.
10. Invited to deliver a **Key Note Lecture** entitled "Nonlinear Seismic Soil-Structure Interaction", in 62<sup>nd</sup> Congress of "Indian Society of Theoretical and Applied Mechanics (ISTAM)" held at Osmania University, Hyderabad on December 15, 2017.
11. Invited to deliver a **Key Note Lecture** entitled "Disaster Management in India and Characterization for Geohazards" in Third Indo-Japan Workshop on "Geotechnics for Natural Disaster Mitigation and Management" held at IIT Guwhati on December 13, 2017 (pre IGC 2017).
12. Invited to deliver a **Key Note Lecture** entitled "Geotechnical issues during earthquakes in Uttarakhand" in a program "Disaster Resilient Infrastructure in the Himalayas: Opportunities and Challenges" organized by Disaster Mitigation and Management Centre (DMMC), Dehradun on November 22, 2017.
13. Invited to deliver a **Key Note Lecture** entitled "Seismic Design of Dams and Embankments including Guidelines for Dam Safety" in a National Seminar on Dam Safety and Disaster Management at Chandigarh by National Power Training Institute (**NPTI**), Nangal, Min. of Power, Govt. of India, Nov. 2, 2017.
14. Attended second meeting of National Platform for Disaster Risk Reduction at **Vigyan Bhawan**, New Delhi during May 15-16, 2017 as a delegate from IIT Roorkee.
15. Attended 10<sup>th</sup> meeting of Governing Body (**GB**) of **NIDM**, at MHA, North Block, New Delhi on April 11, 2017 on behalf of Director, IIT Roorkee. The meeting was chaired by Union Home Secretary.
16. Delivered **invited talk** and address Railway officials going to Japan **through SKYPE** at IRICEN Pune, Ministry of Railways on March 10, 2017
17. Attended a meeting as a member of CED39 (Earthquake Engineering Section) of Bureau of Indian Standards (**BIS**) at New Delhi on February 27, 2017
18. 16th World Conference on Earthquake Engineering (16WCEE) held in **Santiago, Chile** during Jan. 09-13, 2017 delivered an oral presentation.
19. Invited to deliver a **Key Note Lecture** entitled "Geotechnical Issues and Foundation Design of Tall Buildings" in Conference Planning and Design of Tall Buildings Including Earthquake and Wind Effects Organized by Indian Association of Structural Engineers at New Delhi on December 7, 2016
20. Invited to deliver a **Special Presentation Lecture** entitled "Recent Advances in Nonlinear Soil-Structure Interaction for Earthquake Loads" in 6th International Conference on Recent Advances in Geotechnical Earthquake Engineering and Soil Dynamics held at Extension Centre, IIT Roorkee at Greater Noida on August 5, 2016
21. Visited Japan as a part of **High Level Policy Dialogue on Cooperation in Education**, led by Shri V.S. Oberoi, **Secretary, MHRD, Govt. of India** during July 6-9, 2016.
22. Visited Dept. of Geology and Geophysics, IIT Kharagpur to **examine one Ph.D. Thesis** on July 4, 2016.
23. Attended a meeting as a member of CED39 (Earthquake Engineering Section) of Bureau of Indian Standards (**BIS**) at New Delhi on June 16, 2016
24. Visited **Manipur** during January 6-11, 2016 for **Earthquake Damage Survey** along with Prof. Y. Singh and Prof. M. Shrikhande on the invitation of Govt. of Manipur.
25. **Co-Chairman** for 2-Day National **Workshop** on Assessment & Mitigation of Liquefaction Hazards for Seismic Microzonation' held at IIT Roorkee, Nov. 27-28, 2015
26. Attended TIFAC-IDRiM international conference on Disaster Management in New Delhi as a **member of organizing committee** during October 28-30, 2015. Also **chaired a session** on Earthquake Hazards.
27. Invited at **Rail Bhawan** by Ministry of Railways to address the prospective candidates going to Japan for attending training-cum studies in Japanese Universities on October 07, 2015. Also delivered a presentation on the behalf of Saitama University (alma-matter for Ph.D.) who requested to represent them.
28. Delivered **Key note lecture** entitled "Numerical Modeling for Seismic Soil-Structure Interaction" in a National Conference at Ludhiana. Being invited by IGS's Ludhiana Chapter. Also attended the meeting of TC-8 (Physical and Numerical Modeling) of IGS on October 03, 2015.

29. Invited as a **Guest of Honor** at Govt. P.G. College, Kotdwar, Uttarakhand in a workshop on IPR on September 19, 2015
30. Delivered **Key note lecture** entitled “Earthquake Induced Landslides: Evaluations and Protection Measures” in a National Conference on Natural Disaster and Management. Being invited by IGS’s Indore Chapter, also attended the meeting of TC-3 (Natural Disaster Management) of IGS on September 12, 2015.
31. Attended a meeting as a member of CED39 (Earthquake Engineering Section) of Bureau of Indian Standards (**BIS**) at New Delhi on March 27, 2015
32. Visited Dept. of Civil Engineering, IISc Bangalore to **examine a PhD thesis** on January 20, 2015
33. Visited Dept. of Civil Engineering, Jadavpur University to deliver 2 **invited lectures** in a short-term course on January 19, 2015
34. Delivered **Invited Talk** in Preliminary Session entitled "Recent Advances in Seismic Soil-Structure Interaction" during Indian Geotechnical Conference, Kakinada, Andhra Pradesh, December 18, 2014.
35. 14<sup>th</sup> International Conference of the International Association for Computer Methods and Advances in Geomechanics, Kyoto, Japan, September 2014. Delivered **Oral Presentation**.
36. Delivered **Invited Talk** entitled "Seismic Slope Stability and Design of Retaining Walls", in the training programme for Engineers of Rural Engineering Service Department, Govt. of Uttarakhand, Dehradun, March 01, 2014.
37. Delivered **Invited Talk** entitled "Seismic Soil-Pile-Structure Interaction", in the workshop held by AERB, BARC, Mumbai, January 24, 2014.
38. Visited Nainital for **discussion meeting** on research project with Norwegian Colleagues in Nainital during May 22-26, 2013.
39. Post IGC 2012: International Workshop on Seismic Requalification of Geotechnical Structures held at IIT Delhi on December 17, 2012. Delivered **Key Note** Presentation entitled "Soil-structure interaction considerations in the seismic design of Pile foundations".
40. 15<sup>th</sup> World Conference on Earthquake Engineering, Lisbon, Portugal, September 2012. Delivered one Oral and three poster presentations.
41. Delivered **Invited Talk** entitled “Earthquake an Overview” in Regional Workshop on Earthquake: Risk to Resilience, Organized by State Disaster Management Authority, Lucknow, February 23, 2012.
42. 4<sup>th</sup> International Conference on Structural Stability and Dynamics, MNIT, Jaipur, January 2012. Delivered **Key Note** Presentation.
43. First Indo-Japan Symposium on Geotechnical Earthquake Engineering, Kochi, Kerala, December 14, 2011, Delivered **Key Note** Presentation.
44. Post-SMiRT-21 Conference Seminar on Advances in Seismic Design of Structures, Systems and Components of Nuclear Facilities, NPCI, BARC, Mumbai, India, November 2011. Delivered **Invited Talk**.
45. 21<sup>st</sup> International Conference on Structural Mechanics in Reactor Technology (SMiRT-21) New Delhi, India, November 2011. Delivered Oral Presentation.
46. 13<sup>th</sup> International Conference of the International Association for Computer Methods and Advances in Geomechanics, Melbourne, Australia, May 2011. Delivered Oral Presentation.
47. **Key Note Lecture** entitled “Seismic Design of Deep Foundations” at National Workshop on Seismic Design of Earth Structures and Foundations held at IIIT Hyderabad on June 26, 2010
48. 14<sup>th</sup> World Conference on Earthquake Engineering, Beijing, China, October 2008. Delivered two Oral and two poster presentations.
49. 12<sup>th</sup> International Conference of IACMAG, Goa, India, October 2008. Delivered two Oral and one poster presentations.
50. 8<sup>th</sup> U.S. National Conf. on Earthquake Eng., San Francisco, USA, April 2006. Poster presentation entitled “Geotechnical Damages on the Indian Coastline due to Tsunamis caused by Dec. 26, 2004 Sumatra EQ”.
51. 13<sup>th</sup> World Conference on Earthquake Engineering, Vancouver, B.C., Canada, August 2004. Oral presentation entitled “3-D Finite Element Nonlinear Dynamic Analysis for Soil-Pile-Structure Interaction”.
52. 7<sup>th</sup> U.S. National Conference on Earthquake Engineering Boston, MA, USA, July 2002. Oral presentation entitled “Nonlinear Kinematic Response of Single Piles”.
53. ITeach, Integrating Technology into your teaching, Washington University in St. Louis, MO, January 2002.
54. 26<sup>th</sup> Annual Meeting of Deep Foundation Institute, St. Louis, MO, USA, October 2001.

55. Fourth International Conference on Recent Advances in Geotechnical Earthquake Engineering and Soil Dynamics, San Diego, CA, USA, March 2001. Poster presentation entitled “Effect of Plasticity of Soil on Seismic Response of Pile Foundation: Parametric Study.”
56. Geotechnical Earthquake Engineering in Mid-America, Seminar of Mid-America Earthquake Center, Memphis, Tennessee, USA, March 2001.
57. Tenth International Conference on Computer Methods and Advances in Geomechanics, Tucson, Arizona, USA, Jan. 2001. Oral (theme) presentation entitled “Nonlinear Dynamic Analysis of Pile Foundation: Effect of Plasticity of Soil.”

### **Lectures Delivered in Short Term Courses**

1. Five lectures in course “Geotechnical-Earthquake Engineering” organized by DEQ IIT Roorkee, Sponsored by AICTE, Govt. of India (June 2014).
2. Two lectures on Liquefaction and ERD of foundation in programme "Disaster Mitigation and Management for Undergraduate Engineers" sponsored by INAE at CEC, IITR (June 2013).
3. Three lectures on Liquefaction, ERD of foundations and Soil-Structure Interaction in NDMA sponsored programme "Seismic Retrofitting of School Buildings", CEC, IITR (February and March 2013).
4. Three lectures on ERD of foundations, Ground Improvement Technique, Seismic Slope Stability in programme "Earthquake Resistant Structures for Engineers and Architects for SAARC Countries" CEC, IITR (June 2012).
5. Two lectures on Liquefaction and ERD of foundation in programme "Earthquake Risk Mitigation for SAARC Countries" GNEC, IITR (June 2011).
6. Two lectures on Liquefaction and ERD of foundation in programme "Earthquake Risk Mitigation for Engineers" RLC, IEI, organized by CBRI (Sept. 2010).
7. Two lectures on Liquefaction and ERD of foundation in programme "Earthquake Risk Mitigation for SAARC Countries" CEC, IITR (Sept. 2010).
8. Three Lectures on Topics of Geotechnical Earthquake Engineering in Course “Disaster Mitigation and Management for undergraduate Students” sponsored by INAE, New Delhi at CEC, IIT Roorkee (June 2010).
9. One lecture in course “Seismic Analysis of Dams” Organized by DEQ IIT Roorkee, Sponsored by THDC (April 2009).
10. One lecture entitled “ERD of Foundations” Organized by CoEDMM Roorkee, For SAARC Participants (April 2009).
11. One lecture in course “Seismic Analysis of Dams” Organized by DEQ IIT Roorkee, Sponsored by NHPC (February 2009).
12. Four lectures in programme “NPCBEERM” organized by Dept. of Earthquake Engineering, IIT Roorkee, Sponsored by MHA, Govt. of India (September and November 2008).
13. Lectures on ERD of foundations and Liquefaction of Soils in course “Seismic Resistant Design & Rehabilitation of Structures” held at Institution of Engineers, Roorkee Local Centre (April 2008).
14. One lecture in course “Seismic Analysis of Dams” Organized by DEQ IIT Roorkee, Sponsored by CWC and NTPC (March 2008, January 2008 and March 2007).
15. One lecture in the institution of engineers, Roorkee Local Centre “on earthquake resistant design of foundations” organized by CBRI Roorkee (Sept. 2007).
16. Five lectures in course “Geotechnical-Earthquake Engineering” organized by DEQ IIT Roorkee, Sponsored by AICTE, Govt. of India (December 2006).
17. Three lectures in course ““Geotechnical-Earthquake Engineering” held at Bhavnagar, Gujarat, Sponsored by NPEEE, MHRD, Govt. of India (November 2006).
18. Six lectures in programme “NPCBEERM” organized by Dept. of Earthquake Engineering, IIT Roorkee, Sponsored by MHA, Govt. of India (June-July 2006).
19. Six lectures in course “Geotechnical-Earthquake Engineering” organized by DEQ IIT Roorkee, Sponsored by NPEEE, MHRD, Govt. of India (May-June 2006).
20. One lecture in course “Earthquake Resistant Design and Retrofitting of Bridges” Organized by Dept. of Civil Engineering, IIT Roorkee, under QIP Scheme (November 2005).
21. Four lectures in programme “NPCBEERM” held at Town Hall, Silvassa (UT Dadra & Nagar Haveli), Sponsored by MHA, Govt. of India (October 2005).

22. Four lectures in course “Introduction to Earthquake Engineering” held at Directorate of Polytechnic, Jodhpur, Sponsored by NPEEE, MHRD, Govt. of India (July 2005).
23. Three lectures in course “Seismic Design of Reinforced Concrete Buildings” organized by Dept. of Earthquake Engineering, IIT Roorkee, Sponsored by NPEEE, MHRD (May 2005).
24. One lecture in the institution of engineers, Roorkee Local Centre “on earthquake resistant design of foundations” organized by CBRI Roorkee (Sept. 2007).

## **References**

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