

Dr. Suresh R Dash

Assistant Professor

School of Infrastructure
IIT Bhubaneswar,
Bhubaneswar-13, Odisha

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Educational background

PhD (DPhil) (Engineering Science, 2007 - 2010)

- University of Oxford, UK
- Thesis title: Lateral pile-soil interaction in liquefiable soils
- Major: Soil-Structure interaction

Master of Technology (Civil Engineering, 2003-2005)

- Indian Institute of Technology (IIT) Kanpur, India
- Thesis title: Response of Buried Continuous Pipeline to Permanent Ground Deformation
- Major: Structural engineering

Bachelor of Technology (Civil Engineering, 2000-2003)

- National Institute of Technology (NIT) Rourkela, India

Research Interests

Structural Dynamics and Earthquake engineering
Seismic Analysis, Design and Retrofitting of Buildings and Bridges
Soil-Structure Interaction
Pile-Soil Interaction in Liquefiable soils
Seismic Analysis and Design of Pipelines

Positions held

14th December 2011 – Continuing...

Position: Assistant Professor
Employer: IIT Bhubaneswar, Bhubaneswar-13

25th August 2011 – 13th December 2011-12-26

Position: Assistant Professor
Employer: KIIT University, Bhubaneswar

1st September 2010 – 25 July 2011

Position: Research Assistant
Employer: University of Bristol

June 2005 to Jan 2007

Position: Senior Project Associate
Employer: R&D Unit, Indian Institute of Technology (IIT), Kanpur, India

Teaching experience

Courses Taught/Teaching:

Undergraduate Level	Postgraduate Level
○ Design of Steel Structures	○ Advanced Structural Analysis
○ Design of Reinforced Concrete Structures	○ Theory of Elasticity
○ Solid Mechanics	○ Advanced Structural and Geotechnical Laboratory
○ Design Sessional	
○ Structural Detailing Sessional	
○ CAD Lab	
○ Soil Mechanics Laboratory	
○ Material Testing Laboratory	

Computational Skills

Numerical modelling packages: SAP, ETABS, SHAKE, SIMULINK, COMSOL, OpenSees, GID,

Mathematical modelling packages; MATLAB, MATHEMATICA

Experience: Numerical analysis, FE analysis, Curve fitting, Visualization through GID

List of publications

Authored Book:

1. **Dash, S.R.**, and Jain, S.K., “Guidelines for Seismic Design of Buried Pipelines: Provision with Commentary and Explanatory Examples”, IITK-GSDMA, National Information Centre of Earthquake Engineering, Kanpur, India, November 2007, 88 p. ISBN 81-904190-7-2 (<http://www.iitk.ac.in/nicee/IITK-GSDMA/EQ28.pdf>).

Book Chapter Contributions:

2. **Dash, S.R.** and Bhattacharya, S., (2007) “Essential Criteria For Seismic Design Of Piled Foundations In Liquefiable Soil”, Chapter 2, Paper 3, Design of Foundations in Seismic Areas: Principles and Applications, Bhattacharya, S.B. (edt), Published by National Information centre of Earthquake Engineering (NICEE), ISBN: 81-904190-1-3
3. **Dash, S.R.** and Bhattacharya, S., (2007) “Seismic Hazard Assessment for Foundation Design” Chapter 6, Paper 5, Design of Foundations in Seismic Areas: Principles and Applications, Bhattacharya, S.B. (edt), Published by National Information centre of Earthquake Engineering (NICEE), ISBN: 81-904190-1-3

Academic Journal Papers:

4. Bouzid, A., Bhattacharya, S. and **Dash, S.R.**, "Winkler Springs (p-y curves) for pile design from stress-strain of soils: FE assessment of scaling coefficients using the Mobilized Strength Design concept", International Journal of Geomechanics and Engineering”, Techno Press, Vol 5, No 5, 2013.

5. **Dash, S. R.**, Bhattacharya, S. and Blakeborough, A., "Bending-Buckling Interaction as a Failure Mechanism of Piles in Liquefiable Soils", *Journal of Soil Dynamics and Earthquake Engineering*, Volume 30, Issues 1-2, January-February 2010, Pages 32-39.
6. **Dash, S. R.**, Govindaraju, L. and Bhattacharya, S., "A case study of damages of the Kandla Port and Customs Office tower supported on a mat-pile-foundation in liquefied soils under the 2001 Bhuj earthquake." *Soil Dynamics and Earthquake Engineering*, Volume 29, Issue 2, February 2009, Pages 333-346.
7. Bhattacharya, S., Blakeborough, A. and **Dash, S.R.**, " Learning from Collapse of Piles in Liquefiable Soils", *Civil Engineering Special Issue, ICE, UK*. November 2008, Volume 161, Special Issue 2, Pages 54-60.
8. Bhattacharya, S., **Dash, S.R.**, and Adhikari, S., (2008) "On the mechanics of failure of pile-supported structures in liquefiable deposits during earthquakes", *Journal of Current Science*, Vol. 94, No. 5, March 2008.
9. **Dash, S.R.**, Jain S.K., (2008) "An Overview of Seismic Considerations of Buried Pipelines", *Journal of Structural Engineering*, Structural Engineering Research Council (SERC), Madras, Vol 34, No 5, Dec2007-Jan2008, pp 349-359.
10. Murty, C.V.R., Jain, S.K., Sheth, A., Jaiswal, A.R., and **Dash, S.R.** (2006), "Response and Recovery in India after the December 2004 Great Sumatra Earthquake and Indian Ocean Tsunami", *Earthquake Spectra*, Volume 22, No. S3, pp – S731-S758, June 2006, Earthquake Engineering Research Institute (USA).
11. Murty, C.V.R., Rai, D.C., Jain, S.K., Kaushik, H.B., Mondal, G., and **Dash, S.R.**, Tang, A., Yashinsky, M., and Eskijian, M. (2006), "The Effect of the December 2004 Great Sumatra Earthquake and Indian Ocean Tsunami on Transportation Systems in India's Andaman and Nicobar Islands", *Earthquake Spectra*, Volume 22, No. S3, pp - S561-S579, June 2006, Earthquake Engineering Research Institute (USA).
12. Murty, C.V.R., Rai, D.C., Jain, S.K., Kaushik, H.B., Mondal, G., and **Dash, S.R.** (2006), "Performance of Structures in the Andaman and Nicobar Islands (India) during the December 2004 Great Sumatra Earthquake and Indian Ocean Tsunami", *Earthquake Spectra*, Volume 22, No. S3, pp – S321-S354, June 2006, Earthquake Engineering Research Institute (USA).
13. Tang, A., Rai, D.C., Ames, D., Murty, C.V.R., Jain, S.K., **Dash, S.R.**, Kaushik, H.B., Mondal, G., Muruges, G., Plant, G., McLaughlin, J., Yashisky, M., Eskijian, M., Surrampalli, R. (2006), "Lifeline Systems in the Andaman and Nicobar Islands (India) after the December 2004 Great Sumatra Earthquake and Indian Ocean Tsunami", *Earthquake Spectra*, Volume 22, No. S3, pp – S581-S606, June 2006, Earthquake Engineering Research Institute (USA).

Conference Papers:

14. **Dash, S. R.** and Bhattacharya, S. (2012), "Mechanism of failure of three pile-supported structure's during three different earthquakes", 15th World Conference on Earthquake Engineering (15WCEE), Sep 24-28, 2012, Lisbon, Portugal.
15. **Dash, S. R.** and Bhattacharya, S., (2012) "Study of Showa Bridge Pile Failure using a New p-y Curve Model for Liquefied Soils", Joint Conference Proceedings of 9th International Conference on Urban Earthquake Engineering (9CUEE) & 4th Asia Conference on Earthquake Engineering (4ACEE) March 6-8, 2012, Tokyo Institute of Technology, Tokyo, Japan.
16. Draper, F., Mahoney, W., **Dash, S.R.** and Bhattacharya, S. "Pipeline Failure in Earthquakes: Should Active Fault Traces be Considered a Serious Hazard to Buried Pipelines?"

- Proceedings of the 8th International Conference on Urban Earthquake Engineering, March 7-8, 2011, Tokyo Institute of Technology, Tokyo, Japan.
17. Lombardi, D., **Dash, S.R.** and Bhattacharya, S. "Inclusion of Axial Load on bending response of pile in liquefiable soils" Proceedings of the 8th International Conference on Urban Earthquake Engineering, March 7-8, 2011, Tokyo Institute of Technology, Tokyo, Japan.
 18. Lombardi, D., **Dash, S.R.** and Bhattacharya, S. "Simplified Dynamic Analysis of pile supported structures in liquefiable soils", Joint Conference Proceedings of 7th International Conference on Urban Earthquake Engineering (7CUEE) & 5th International Conference on Earthquake Engineering (5ICEE) March 3-5, 2010, Tokyo Institute of Technology, Tokyo, Japan.
 19. **Dash, S.R.**, Govindraju, L. and Bhattacharya, S., "Tilting of The Port and Customs Office Tower at Kandla Port during the 2001 Bhuj Earthquake – A Diagnostic Study", International Symposium on Forensic Approach to Analysis of Geohazard Problems, ISSMGE TC 302 Forensic Geotechnical Engineering, December 14-15, 2010, Mumbai, India.
 20. **Dash, S. R.**, Suresh N. K., Bhattacharya, S. and Blakeborough, A. "Characterisation of ERT as a New Non-Invasive Monitoring Method of Liquefaction Process", Joint Conference Proceedings of 7th International Conference on Urban Earthquake Engineering (7CUEE) & 5th International Conference on Earthquake Engineering (5ICEE) March 3-5, 2010, Tokyo Institute of Technology, Tokyo, Japan.
 21. Lombardi, D., Durante, M.G., **Dash, S.R.** and Bhattacharya, S., "Fixity of piles in liquefiable soils", 5th International conference on Recent Advances in Geotechnical Earthquake Engineering and Soil Dynamics, Paper No. 5.39a, May 24-29, 2010, California, USA.
 22. **Dash, S.R.**, Bhattacharya, S. and Blakeborough, A., "Study of p-y curves for liquefiable soil", Performance-Based Design in Earthquake Geotechnical Engineering, Kokusho, Tsukamoto & Yoshimine (eds), Taylor & Francis Group, London, ISBN 978-0-415-555614-9, ICPBD Conference, Tsukuba, Japan, 2009.
 23. **Dash, S.R.**, Bhattacharya, S., Blakeborough, A. and Hyodo, M., "p-y curve to model lateral response of pile foundations in liquefiable soils", 14th World Conference on Earthquake Engineering (14WCEE), October 12-17, 2008, Beijing, China.
 24. **Dash, S.R.**, Govindraju, L. and Bhattacharya, S., "On the probable cause of the failure of Kandla Port and Customs Office Tower during the 2001 Bhuj Earthquake", 14th World Conference on Earthquake Engineering (14WCEE), October 12-17, 2008, Beijing, China.
 25. Bhattacharya, S., **Dash, S. R.**, Mitra, N., Adhikari, S. and Blakeborough, A., "Investigation of bending-buckling interaction of piles in liquefiable soils", 14th World Conference on Earthquake Engineering (14WCEE), October 12-17, 2008, Beijing, China.
 26. **Dash, S.R.**, and Bhattacharya, S., "Criteria for design of piled foundations in seismically liquefiable deposits", 4th International conference on earthquake geotechnical engineering, June 25-28, 2007, Thessaloniki, Greece.
 27. Murty, C.V.R., Dasgupta, K., and **Dash, S.R.**, "Open Ground Storey RC Frame Buildings with 230mm Columns unsafe during Earthquakes", Proc. of National Workshop on Earthquake Resistant Design Construction, Retrofit & its Implementation, Indian Concrete Institute (ICI), Proceeding Part-A, 12-13 September 2006, The Park, Kolkata.
 28. Murty, C.V.R., Dasgupta, K., and **Dash, S.R.**, "Indian RC Frame Buildings Unsafe during Earthquakes with Parking Lot in Ground Storey and 230mm Columns", National Seminar on Seismic Detailing of RCC Structures, Indian Concrete Institute (ICI), May 2006.

29. **Dash, S.R.**, and Jain, S.K., "Seismic Design of Buried Pipelines in Indian Context", National Symposium on Structural Dynamics, Random Vibrations and Earthquake Engineering, Indian Institute of Science, Bangalore, July 2005.
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