

## Complete Publications

### *Book*

1. Jain, S. K., Brzev, S., Bhargava, L. K., **Basu, D.**, Ghosh, I., and Ghaisas, V. K. (2015). "Confined masonry: for residential construction." Gandhinagar, IN: Indian Institute of Technology, Gandhinagar, 2015, ISBN: 978-93-5258-078-1

### *Book Chapters*

1. **Basu, D.** (2005). Pushover analysis for structural assessment. Capacity Building of Engineers in Earthquake risk Management. Chennai, India, Allied Publishers Pvt. Ltd. (India). **1**: 3.109-103.135.
2. **Basu, D.** (2007). Dynamic response of structures and response spectrum. Analysis and Design of Structures for Wind and Seismic Loads. Chennai, India, Allied Publishers Pvt. Ltd. (India): 25-47.

### *Refereed Journal Publications*

1. Bashir, A. and **Basu, D.** (2018). "Revisiting Probabilistic Seismic Hazard Analysis of Gujarat: An Assessment of Indian Design Spectra." Natural Hazards, Springer (in print).
2. Rodda, G.K. and **Basu, D.** (2017). "Coherency model for translational and rotational ground motions." Bulletin of Earthquake Engineering, Springer (in print).
3. Verma, R. and **Basu, D.** (2017). "On Correlating the Modulus of Elasticity of Stack-bonded Fly-ash Brick Masonry using Impact Hammer and Compression Tests." European Journal of Environmental and Civil Engineering. DOI.org/10.1080/19648189.2017.1410232.
4. Rodda, G.K. and **Basu, D.** (2017). "Apparent translational component for rotational ground motions." Bulletin of Earthquake Engineering, DOI 10.1007/s10518-017-0203-x.
5. **Basu, D.**, Constantinou, M. C. and Whittaker, A. S. (2017). "Discussion on "Array-derived rotational seismic motions: revisited"." Bulletin of Earthquake Engineering, Vol. 15 (12): 5605-5615.
6. Ghaisas, K.V., **Basu, D.**, Brzev, S. and Pérez Gavilán, J.J. (2017). "Strut-and-Tie Model for Seismic Design of Confined Masonry Buildings." Construction and Building Materials, Vol. 147: 677-700.
7. **Basu, D.**, Whittaker, A. S. and Constantinou, M. C. (2017). "On the design of a dense array to extract rotational components of earthquake ground motion." Bulletin of Earthquake Engineering, Vol 15 (3): 827-860.
8. Rodda, G.K. and **Basu, D.** (2017). "On extracting rotational components of ground motion using an empirical rotational window." International Journal of Earthquake and Impact Engineering, Vol. 1 (3): 253-288.
9. **Basu, D.** and Kota, T. (2016). "Estimating Peak Dynamic Response from Pushover Type Analysis using a Semi-Empirical Method." Bulletin of Earthquake Engineering, Vol. 14 (12): 3409–3440.
10. **Basu, D.** and Reddy, P.R.M. (2016). "A New Metallic Damper for Seismic Resilience: Analytical Feasibility Study." Structures, 7: 165-183.
11. **Basu, D.** and Giri, S. (2015). "Accidental eccentricity in multistory buildings due to torsional ground motion." Bulletin of Earthquake Engineering, Vol. 13 (12): 3779-3808.
12. **Basu, D.** and Whittaker, A. S. (2015). "Efficient Generation of Statistically Consistent Demand Vectors for Seismic Performance Assessment", Journal ING-IABSE, Special Issue on Earthquake Engineering, March-2015.
13. **Basu, D.**, Whittaker, A. S. and Constantinou, M. C. (2015). "Characterizing rotational components of earthquake ground motion using a surface distribution method and response of sample structures." Engineering Structures, Vol. 99: 685-707.

14. **Basu, D.**, Constantinou, M. C. and Whittaker, A. S. (2014). "An equivalent accidental eccentricity to account for the effects of torsional ground motion on structures." *Engineering Structures*, Vol. 69: 1-11.
15. **Basu, D.**, Whittaker, A. S. and Constantinou, M. C. (2013). "Extracting rotational components of earthquake ground motion using data recorded at multiple stations." *Earthquake Engineering and Structural Dynamics*, Vol. 42 (3): 451-468.
16. **Basu, D.**, Whittaker, A. S. and Constantinou, M. C. (2012). "On estimating rotational components of ground motion using data recorded at a single station." *Journal of Engineering Mechanics*, ASCE, 138 (9): 1141-1156.
17. Balasubramanian, S. R., Rao, K. B., **Basu, D.**, Anoop, M. B. and Vaidyanathan, C. V. (2011). "An improved method for estimation of elastic lateral stiffness of brick masonry shear walls with openings." *Journal of Civil Engineering, KSCE*, 15(2): 281-293.
18. **Basu, D.** (2009). "Dynamics of a class of horizontal setback buildings with flexible floor diaphragm." *Journal of Structural Engineering, ASCE*, 135: 873-877.
19. Lakshmanan, N., Raghuprasad, B. K., Muthumani, K., Gopalakrishnan, N. and **Basu, D.** (2008). "Identification of reinforced concrete beam-like structures subjected to distributed damage from experimental static measurements." *Computers and Concrete*, 5(1): 37-60.
20. Lakshmanan, N., Raghuprasad, B. K., Muthumani, K., Gopalakrishnan, N. and **Basu, D.** (2008). "Damage evaluation through radial basis function network based artificial neural network scheme." *Smart Structures and Systems*, 4(1): 99-102.
21. **Basu, D.** and Gopalakrishnan, N. (2008). "Analysis for preliminary design of a class of torsionally coupled buildings with horizontal setbacks." *Engineering Structures*, 30: 1272-1291.
22. **Basu, D.** (2008). "From third to fourth order variant of newton's method for simple roots." *Applied Mathematics and Computations*, 202: 886-892.
23. **Basu, D.** (2008). "Family of cubically convergent scheme using inverse newton function for multiple roots." *International Journal for Computational Methods in Engineering Science & Mechanics*, 9: 189-200.
24. **Basu, D.** (2008). "Composite fourth order newton type method for simple root." *International Journal for Computational Methods in Engineering Science & Mechanics*, 9: 201-210.
25. **Basu, D.** and Jain, S. K. (2007). "Alternative method to locate center of rigidity in asymmetric buildings." *Earthquake Engineering and Structural Dynamics*, 36: 965-973.
26. Lakshmanan, N., Raghuprasad, B. K., Muthumani, K., Gopalakrishnan, N. and **Basu, D.** (2006). "Wavelet analysis and enhanced damage indicators." *Smart Structures and Systems*, 3(1): 23-49.
27. **Basu, D.** (2005). "Proportionate dynamically non-separable buildings: a class of buildings with horizontal setback." *International Journal of Structural Stability and Dynamics*, 5(1): 95-112.
28. **Basu, D.** and Jain, S. K. (2004). "Seismic analysis of asymmetric buildings with flexible floor diaphragm." *Journal of Structural Engineering, ASCE*, 130: 1169-1176.

#### ***Journal Papers In Review/Revision***

- 1 **Basu, D.** "Simplified analysis of confined masonry buildings with asymmetry for force based seismic design." *Structures*, Elsevier.
- 2 Nema, H. and **Basu, D.** "Natural Properties of Confined Masonry Buildings-- Experimental Case Studies and Possible Inferences." *European Journal of Environmental and Civil Engineering*, Taylor & Francis.
- 3 Rodda, G.K. and **Basu, D.** "Parameterisation of Auto-Spectral Density of Earthquake Induced Strong Ground Motions." *Soil Dynamics and Earthquake Engineering*, Elsevier.
- 4 Rodda, G.K. and **Basu, D.** "Spatial Variation and Conditional Simulation of Seismic Ground Motion." *Bulletin of Earthquake Engineering*.

### ***Refereed Conference Proceedings***

1. Rodda, G.K. and **Basu, D.** (2016). "Coherency model for dense seismic array." Structural Engineering Convention, SERC, Chennai.
2. Jain, S.K., Brzev, S, **Basu, D.**, Rai, D.C. and Mitra, K. "Confined masonry construction for improved seismic safety of buildings in India", in *the International Seminar on Emerging Building Materials and Construction Technologies*, India Habitat Centre, New Delhi, IN, 2016.
3. **Basu, D.** and Reddy, P. R. (2015). "Design of a New Passive Energy Dissipation System", 5th Tongji-UBC Symposium on Earthquake Engineering, May 4-8, 2015 Tongji University Shanghai, China.
4. Rodda, G. R. and **Basu, D.** (2015). "Development of a Window Based Approach for Simplified Estimation of Rotational Ground Motion", 5th Tongji-UBC Symposium on Earthquake Engineering, May 4-8, 2015 Tongji University Shanghai, China.
5. Jain SK, **Basu D.**, Ghosh I, Rai DC, Brzev S, and Bhargava LK. Application of Confined Masonry in a Major Project in India. *Proceedings of the 10<sup>th</sup> National Conference in Earthquake Engineering*, Earthquake Engineering Research Institute, Anchorage, AK, 2014.
6. **Basu, D.**, Constantinou, M. C. and Whittaker, A. S. (2011). "Including accidental torsion in response-history analysis of safety-related nuclear structures." *Transactions, SMiRT21*, New Delhi, India, Div-VI: Paper ID# 279.
7. **Basu, D.** and Rao, K. B. (2008). "Reliability Analysis of Steel Frame Structures, Located in Coastal Region of India." *ICONQR08*, Indian Statistical Institute, Calcutta, (in CD).
8. Balasubramanian, S. R., **Basu, D.**, Anoop, M. B. and Rao, K. B. (2008). "Stiffness of brick masonry shear walls with openings-parametric study and probabilistic analysis." *Proc. of National Conference on Recent Advances in Structural Engineering*, Anantapur, Andhra Pradesh, India, 177-186.
9. **Basu, D.**, Gopalakrishnan, N., Muthumani, K. and Lakshmanan, N. (2005). "Concept of floor isolation in reducing seismic demand." *Proc. International Conference on Advances in Concrete Composites and Structures*, SERC, Chennai, India, 1057-1064.
10. Lakshmanan, N., Muthumani, K., **Basu, D.**, Sreekala, R. and Gopalakrishnan, N. (2002). "Design for seismic base isolation." *Proc. of 12th Symposium on Earthquake Engineering*, Roorkee, India.

### **Reports**

#### **MCEER Report**

1. **Basu, D.**, Whittaker, A. S. and Constantinou, M. C. (2012). "Characterizing the rotational components of earthquake ground motion." *MCEER-12-0005*, Multidisciplinary Center for Earthquake Engineering Research, SUNY, Buffalo, NY.

#### **In-house Research Reports at Structural Engineering Research Centre (SERC), Chennai, India**

1. **Basu, D.**, Rao, K. B. and Lakshmanan, N. (2007). "Robust fatigue reliability analysis of reinforced concrete bridge piers subjected to earthquake excitation." Report No. SS-OLP11641-RR-2007-4, Structural Engineering Research Center, Chennai, India.
2. **Basu, D.**, Rao, K. B., Lakshmanan, N. and Anoop, M. B. (2007). "Reliability analysis of reinforced concrete bridge piers subjected to earthquakes." Report No. SS-OLP11641-RR-2007-1, Structural Engineering Research Center, Chennai, India.
3. Report No. MLP 9641/20, Structural Engineering Research Center, Chennai, India.
4. **Basu, D.**, Lakshmanan, N. and Gopalakrishnan, N. (2006). "Hybrid damping amplification assemblage (hydia) for energy dissipation in buildings and structures." Report No. MLP12141/01(P), Structural Engineering Research Center, Chennai, India.
5. Muthumani, K., Gopalakrishnan, N., kumar, K. S., Sreekala, R. and **Basu, D.** (2006). "A review on seismic retrofitting strategies for structures." Report No. MLP 12141/03, Structural Engineering Research Center, Chennai, India.

6. Muthumani, K., Gopalakrishnan, N., Sathishkumar, K., Sreekala, R., **Basu, D.** and Yashwant, V. A. (2006). "State of the art report on seismic damage control strategies for structures." Report No. MLP12141/01, Structural Engineering Research Center, Chennai, India.
7. Kumar, K. S., Muthumani, K., Gopalakrishnan, N., Sreekala, R., **Basu, D.** and Avinash, S. (2005). "Experimental evaluation of dynamic characteristics of laminated rubber bearing."
8. **Basu, D.**, Avinash, S., Gopalakrishnan, N. and Muthumani, K. (2004). "Performance evaluation of asymmetric flexible floor diaphragm buildings with horizontal offsets by pushover analysis." Report No. MLP 9641/18, Structural Engineering Research Center, Chennai, India.
9. **Basu, D.**, Gopalakrishnan, N., Muthumani, K. and Lakshmanan, N. (2003). "Dynamically separable buildings – concept, illustration and extension to wider domain." Report No. MLP 09641/05, Structural Engineering Research Center, Chennai, India.
10. **Basu, D.**, Gopalakrishnan, N., Muthumani, K. and Lakshmanan, N. (2003). "Dynamics of a class of horizontal setback buildings with flexible floor diaphragm." Report No. MLP 09641/05, Structural Engineering Research Center, Chennai, India.
11. **Basu, D.**, Avinash, S., Muthumani, K. and Lakshmanan, N. (2003). "Effect of asymmetry and in-plane floor diaphragm flexibility on performance evaluation of buildings by pushover analysis." Report No. MLP 9641/13, Structural Engineering Research Center, Chennai, India.
12. **Basu, D.**, Gopalakrishnan, N., Muthumani, K. and Lakshmanan, N. (2003). "Concept of floor isolation in reducing seismic demand." Report No. MLP 9641/12, Structural Engineering Research Center, Chennai, India.
13. **Basu, D.**, Gopalakrishnan, N., Muthumani, K. and Lakshmanan, N. (2002). "Simplified method of analysis of torsionally coupled buildings with horizontal offsets for preliminary seismic design." Report No. MLP 09641/03, Structural Engineering Research Center, Chennai, India.
14. **Basu, D.**, Gopalakrishnan, N., Muthumani, K. and Lakshmanan, N. (2002). "Effect of base isolation on asymmetric buildings – Part-I: Elastic system." Report No. MLP 09641/04, Structural Engineering Research Center, Chennai, India.