

Shiv Prakash

Assistant Professor

Department of Earthquake Engineering

IIT Roorkee, Roorkee, Uttarakhand, India, 247667



Education

Indian Institute of Technology Bombay

Ph.D. (PMRF), Civil Engineering, 2018-2023

Indian Institute of Technology Guwahati

B.Tech, Civil Engineering, 2014-2018

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Research Interests

- Vibration Control
- Nonlinear Analysis & Optimization
- Hysteretic Modelling
- Lifecycle Cost Analysis
- Experimental Investigation
- Bridge Dynamics
- Finite Element Modelling
- Advanced Algorithm in Eq. Engg.



PhD and Postdoctoral Work

- **Post Doctorate Fellow (Unina Federico II)** *Feb 2024 – Mar 2025*
 - **ATTASUB:** Analytical Tools and Technical Assessment for large-scale Seismic Upgrade of Bridges
 - *Reinforcing the existing highway bridges in Italy for better seismic resilience.*
 - *Funded by the Ministry of University and Research (MUR), Italy.*
 - *Collaboration between three universities (UNINA, UNIPARTHENOPE, ITC-CNR).*
 - **FREISUST:** Fiber-Reinforced Elastomeric Isolators for seismic resilient structures with SUSTainable Solutions
 - *Full-scale experimental testing of low-cost unbonded fiber-reinforced elastomeric bearings.*
 - *Funded by Engineering Research Infrastructures for European Synergies (ERIES).*
 - *Collaboration between several European universities (UNINA, UCB, NTUA, ETH, etc.).*

- **Post Doctorate Fellow (IIT Bombay)**

July 2023 – Jan 2024

- Application of inerter-based damping devices to Unbonded Fiber-reinforced Elastomeric Isolators (U-FEI)-isolated structure.

- **Ph.D. (IIT Bombay)**

July 2018 – July 2023

- Seismic Isolation using Unbonded Fiber-reinforced Elastomeric Isolators
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Courses Taught

- Structural Dynamics
 - Earthquake Engineering & Structural Control
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Publications

Journals

- Prakash, S., & Jangid, R. S. (2024). Application of supplementary inerter-based damping devices alongside unbonded fiber-reinforced elastomeric isolators, *International Journal of Structural Stability and Dynamics*. <https://doi.org/10.1142/S0219455425502232>
- Prakash, S., & Jangid, R. S. (2024). Multihazard response of unbonded fibre-reinforced elastomeric isolator-isolated structures. *Proceedings of the Institution of Civil Engineers - Structures and Buildings*, 177(2), 81–98. <https://doi.org/10.1680/jstbu.22.00170>
- Prakash, S., & Jangid, R. S. (2023). Unbonded Fiber-Reinforced Elastomeric Isolators for Isolating Masonry Buildings, *Practice Periodical on Structural Design and Construction*, 29(2), 04023070. <https://doi.org/10.1061/ppscfx.sceng-1413> (Editor's Choice)
- Prakash, S., & Jangid, R. S. (2022). Seismic response of isolated structures with an improved model of the U-FREI. *Structures*, 42, 434–448. <https://doi.org/10.1016/j.istruc.2022.06.024>
- Prakash, S., & Jangid, R. S. (2022). Optimum parameters of tuned mass damper-inerter for damped structure under seismic excitation. *International Journal of Dynamics and Control*, 10, 1322–1336. <https://doi.org/10.1007/s40435-022-00911-x>
- Gadi, V. K., Garg, A., Prakash, S., Wei, L., & Andriyas, S. (2018). A non-intrusive image analysis technique for measurement of heterogeneity in grass species around tree vicinity in a green infrastructure, *Measurement*, 114, 132–143. <https://doi.org/10.1016/j.measurement.2017.09.010>

Book Chapters

- Prakash, S., Islam, N. U., Jangid R. S. (2022). Unbonded fiber-reinforced elastomeric isolators coupled with negative stiffness-based dampers, In: Shrikhande, M., Agarwal, P., Kumar, P.C.A. (eds) *Proceedings of 17th Symposium on Earthquake Engineering (Vol. 1)*.
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SEE 2022. *Lecture Notes in Civil Engineering*, 329. Springer, Singapore.
http://dx.doi.org/10.1007/978-981-99-1608-5_50

- Islam, N. U., Prakash, S., Jangid R. S. (2022). Seismic response control of elevated liquid storage tanks using negative stiffness and inerter based dampers, *In: Shrikhande, M., Agarwal, P., Kumar, P.C.A. (eds) Proceedings of 17th Symposium on Earthquake Engineering (Vol. 1)*. SEE 2022. *Lecture Notes in Civil Engineering*, 329. Springer, Singapore.
http://dx.doi.org/10.1007/978-981-99-1608-5_44

Conferences

- Prakash, S., Ghodke, S. L., Jangid, R. S. (2020). Base isolation of a masonry building using modified rectangular fibre-reinforced elastomeric isolators, *17th world conference on earthquake engineering*, Sendai, Japan. <https://wcee.nicee.org/wcee/article/17WCEE/2g-0118.pdf>
- Prakash, S., Jangid R. S. (2023). Supplementary damping devices to mitigate the near-fault seismic effects on the U-FEI-isolated structures, *9th International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering.*, Athens, Greece. <https://2023.compdyn.org/proceedings/pdf/20485.pdf>
- Ghodke, S. L., Prakash, S., Akhare, A. R., Choudhary, V. P., Jangid, R. S. (2020). Performance of damage-resistant self-centering and damage-free device against massive earthquakes, *17th world conference on earthquake engineering*, Sendai, Japan. <https://wcee.nicee.org/wcee/article/17WCEE/2g-0163.pdf>
- Prakash, S., Sihag, S. K., Soni, A., Gadi, V. K., & Garg, A. (2016). Investigation of infiltration temporal variation in different soils vegetated with drought-sensitive cowpea, *CESDOC*, Guwahati, India.
- Wagh, B. S., Soni, A., Prakash, S., Das, A., & Garg, A. (2016). Performance analysis of drought-resistant cowpea in red soil under the absence of nutrients, *CESDOC*, Guwahati, India.



Accomplishments

- Prime Minister Research Fellowship/PMRF (2018-2023)
 - Merit cum Means Scholarship/MCM (2014-2018)
 - IIT-JEE 2014
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