Varun Kumar Singla, Ph.D.

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Academic Positions

August 2021 – Present	*Indian Institute of Technology Roorkee* Assistant Professor
January 2021 – July 2021	*University College Dublin* Research Scientist (PI: Dr. Ivan Lokmer) Research: *Amplification of Seismic Rotations Due to Subsurface Heterogeneities*
April 2020 – December 2020	*University College Dublin* Post-Doctoral Research Fellow (PI: Dr. Ivan Lokmer) Research: *Removal of Surface Waves from Active Seismic Records Using Seismic Interferometry*
September 2019 – March 2020	*Indian Institute of Technology Madras* Project Officer (PI: Dr. S. T. G. Raghukanth) Research: *Simulation of Seismic Motion in Reduced Micropolar Medium*

Education

2010 – 2020	*Indian Institute of Technology Kanpur* Ph.D. (Civil Engineering), CPI: 8.8/10, Thesis Supervisor: Dr. Vinay Kumar Gupta Dissertation Title: *On Simulation of Rotational Seismic Ground Motions by Planar Wavefront Modeling and for a Kinematic Shear Dislocation*
2006 – 2010	*Indian Institute of Technology Kanpur* B. Tech (Civil Engineering)

Ongoing Projects

Funding Agency	Title	Role
THDC India Ltd.	Measurement of Rotational Seismic Ground Motion in Garhwal Himalayas	PI
DMRC Ltd.	Pilot Study on Measurement of Metro-Induced Noise and Vibrations based on Metro Speed and Track Conditions and Effectiveness of MSS	PI
TARANGAA Vibroacoustic Pvt. Ltd.	Ambient Vibration Measurement and ASD Reconstruction Study at the LIGO India Project Site, Hingoli	PI
IIT Roorkee	Measurement and Simulation of Seismic Rotational Ground Motions	PI
Science and Engineering Research Board, DST	Effect of Torsional Ground Motion on Code Compliant Buildings in Seismic Risk Framework	Co-PI

Awards

2020 *Outstanding PhD Thesis Award* for best thesis in Civil Engineering Department, IIT Kanpur

Professional Engagements

2020-Present	Reviewer of *Soil Dynamics and Earthquake Engineering, Earthquake Engineering and Engineering Vibration*, *ISET, and Sādhanā* journal articles.
October 2022	Expert Lecture on *The Science of Earthquakes*, NITTTR, Chandigarh.
May 2023-Present	Co-Editor, Indian Society of Earthquake Technology
May 2024	Expert Lecture on Towards an Intuitive Understanding of Seismic Wave Propagation in Layered Medium, NIT Rourkela
February 2025	Invited Speaker at 1st International Conference on Advances in Structural and Geotechnical Engineering (ASAGE'25), IIT Patna
March 2025	Keynote Speaker at Centenary National Seminar on Strong Motion Earthquake, IIT (ISM) Dhanbad
June 2025	Invited Speaker at 7th Meeting of International Working Group on Rotational Seismology, Opole University of Technology, Poland

Journal Articles

1. **Singla, V.K.** and V.K. Gupta (2016). On planar seismic wavefront modeling for estimating rotational ground motions: case of 2-D SH line-source, Soil Dyn. Earthq. Eng., 85, 62–77. DOI.
2. **Singla, V.K.** and V.K. Gupta (2018). Planar seismic wavefront modeling for estimating rotational ground motions: case of 2D P-SV line source, *J. Eng. Mech. (ASCE)*, 144(7), 04018048. DOI.
3. **Singla, V.K.** and V.K. Gupta (2019). Surface rotations due to kinematic shear dislocation point source in a multilayered elastic medium, *Bull. Seism. Soc. Amer.*, 109(1), 433–447. DOI.
4. **Singla, V.K.** and V.K. Gupta (2019). Physics-based planar wavefront model to estimate seismic rocking spectra using translational spectra, *J. Eng. Mech. (ASCE)*, 145(4), 04019016. DOI.
5. **Singla, V.K.** and V.K. Gupta (2021). An improved planar wavefront model to estimate rocking seismic motion spectra using translational spectra at a single station, *Soil Dyn. Earthq. Eng.*, 144, 106612. DOI.
6. Dhabu, A.C., **V.K. Singla**, and S.T.G. Raghukanth (2021). Seismic wave propagation through layered reduced micropolar medium, *J. Geophys. Res. Solid Earth*, 126(11), e2020JB020931. DOI.
7. **Singla, V. K.**, and Raghukanth, S. T. G. (2024). Surface rotations and translations of layered elastic half-space due to static shear dislocation point source. *Int J Adv Eng Sci App. Math*, 16(1), 74-86. DOI.
8. Maheshwari, B. K., **Singla, V. K.**, & Das, S. (2024). Reconnaissance report of the 21 July 2023 Jaipur earthquakes in Rajasthan, India. *Current Science* (00113891), 126(5).
9. Basu, J., Rashmi, B. S., Raghukanth, S. T. G., and **Singla, V.K.** (2026). An analytical model for subsurface ground motions due to kinematic shear dislocation sources in layered media. *Soil Dyn. Earthq. Eng.*, 208, 110319. DOI.