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), CPI: 7.8/10

Teaching

2022, 2023	IEQ-301 “Introduction to Earthquake Engineering” (Undergraduate Course at IIT Roorkee)
2022	EQN-531 “Seismological Modelling and Simulation” (Postgraduate Course at IIT Roorkee)

Awards

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

Professional Activities

2020-Present	Reviewer of *Soil Dynamics and Earthquake Engineering, Earthquake Engineering and Engineering Vibration*, *and Sādhanā* journal articles.
October 2022	Expert Lecture on *The Science of Earthquakes*, NITTTR, Chandigarh.

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.

Conference Presentations

1. Singla, V.K. and V.K. Gupta (2015). On adequacy of plane-wave approximation for evaluating near-field seismic rotational ground motion: case of SH source, SSA 2015 Annual Meeting, Pasadena, California, U.S.A.
2. Singla, V.K. and V.K. Gupta (2015). On adequacy of plane wave approximation for evaluating near-field rotational ground motions: case of P-SV source, 26th IUGG General Assembly 2015, Prague, Czech Republic.
3. Dhabu, A.C., V.K. Singla, and S.T.G. Raghukanth (2019). Seismic wave propagation in layered reduced micropolar half-space, 5th International Working Group on Rotational Seismology Workshop, Taiwan.
4. Singla, V.K. and I. Lokmer (2021). Removal of surface waves from active seismic records using seismic interferometry, Irish Geological Research Meeting, Dublin, Ireland.
5. Singla, V.K. and I. Lokmer (2022). Semi-analytical method for simulating rotational ground motion in two-dimensional heterogeneous elastic half-space, EGU General Assembly 2022, Vienna, Austria. DOI.
6. Singla, V.K. and I. Lokmer (2022). Amplification of torsional ground motion in 2-D heterogeneous elastic medium, AGU Fall Meeting 2022, Chicago, Illinois, U.S.A.