

PUBLICATIONS

Published

1. Monika, **Agrawal, M.***, Tilara, C.*, 2024. Seismic Hazard Assessment of Mathura City (India): A Deterministic Approach. *J Earth Syst Sci.* (Accepted).
2. Kasaundhan, H., Singh, D.K., **Agrawal, M.***, 2024. Deciphering the crustal anisotropy and mantle flow beneath the Indo-Burma ranges from the harmonic decomposition of the receiver functions. *Physics of the Earth and Planetary Interiors* 107183. <https://doi.org/10.1016/j.pepi.2024.107183>
3. Shams, R., **Agrawal, M.***, 2024. Nonlinear Seismic Site Response Analysis of Shallow Sites in Dhanbad City, Jharkhand, India. *Geotech Geol Eng.* <https://doi.org/10.1007/s10706-024-02742-3>
4. Gupta, R.K., **Agrawal, M.***, Shams, R., Pal, S.K., 2023b. Seismic site response study of Dhanbad city (India) using equivalent linear analysis complemented by horizontal-to-vertical spectral ratios. *Environ Earth Sci* 82, 291. <https://doi.org/10.1007/s12665-023-10985-1>
5. Gupta, R.K., **Agrawal, M.***, Pulliam, J., 2023a. Joint Modelling and Uncertainty Estimation for Site Characterization of Dhanbad City (India) Using Global Optimization. *Pure Appl. Geophys.* 180, 3947–3969. <https://doi.org/10.1007/s00024-023-03358-z>
6. Kumar Das, M., **Agrawal, M.***, Patel, A., 2023. A seismic investigation of lithospheric velocities beneath the Chhotanagpur Plateau (India) using waveform modeling of shear-coupled PL waves and other phases. *Journal of Asian Earth Sciences* 256, 105798. <https://doi.org/10.1016/j.jseaes.2023.105798>
7. Kumar, S., **Agrawal, M.***, Pulliam, J., 2023. Modeling Seismic Anisotropy Beneath the Island of Hispaniola via the Harmonic Decomposition of Receiver Functions. *Geochem Geophys Geosyst* 24, e2022GC010773. <https://doi.org/10.1029/2022GC010773>
8. Shams, R., **Agrawal, M.***, 2023. Kappa model and Coda-Q for Eastern Chotanagpur Plateau region (India). *Nat Hazards* 117, 519–553. <https://doi.org/10.1007/s11069-023-05871-9>
9. Shams, R., **Agrawal, M.***, Gupta, R.K., 2022. Probabilistic seismic hazard assessment of Kishanganj, Bihar, India. *J Earth Syst Sci* 131, 257. <https://doi.org/10.1007/s12040-022-01999-7>
10. Vijayan, A., **Agrawal, M.***, Gupta, R.K., 2022. Seismic Site Characterization Using Ambient Noise and Earthquake HVSr in the Easternmost Part of Shillong Plateau, India. *J Geol Soc India* 98, 471–478. <https://doi.org/10.1007/s12594-022-2004-3>
11. Bhatia, M., Rajesh, R., Ravi Kumar, **Agrawal, M.**, 2022. Microseismic source distribution inferred from noise recordings at the Gujarat Seismic Network, India. *J Earth Syst Sci* 131, 23. <https://doi.org/10.1007/s12040-021-01779-9>
12. Gupta, R.K., **Agrawal, M.***, Pal, S.K., Das, M.K., 2021. Seismic site characterization and site response study of Nirsa (India). *Nat Hazards* 108, 2033–2057. <https://doi.org/10.1007/s11069-021-04767-w>
13. **Agrawal, M.***, Das, M.K., Kumar, S., Pulliam, J., 2021. Mapping lithospheric seismic structure beneath the Shillong plateau (India) and adjoining regions by jointly fitting receiver functions and surface wave dispersion. *Geophysical Journal International* 226, 1645–1675. <https://doi.org/10.1093/gji/ggab146>
14. Kumar, S., **Agrawal, M.***, Pulliam, J., Rivera, E.P., Huérfano, V.A., 2020. Crustal thickness and bulk Poisson ratios in the Dominican Republic from receiver function analysis. *Tectonophysics* 775, 228308. <https://doi.org/10.1016/j.tecto.2019.228308>
15. Gupta, R.K., **Agrawal, M.***, Pal, S.K., Kumar, R., Srivastava, S., 2019. Site characterization through combined analysis of seismic and electrical resistivity data at a site of Dhanbad, Jharkhand, India. *Environ Earth Sci* 78, 226. <https://doi.org/10.1007/s12665-019-8231-2>
16. Das, M.K., **Agrawal, M.***, Gupta, R.K., Gautam, J.L., 2019. Lithospheric seismic structure beneath two

broadband station sites of the eastern part of Chhotanagpur Plateau: New constraints from receiver functions and dispersion curves. *Physics of the Earth and Planetary Interiors* 287, 51–64. <https://doi.org/10.1016/j.pepi.2019.01.004>

17. **Agrawal, M.***, Pulliam, J., Sen, M.K., Grand, S.P., 2019. Lithospheric Removal Beneath the Eastern Flank of the Rio Grande Rift From Receiver Function Velocity Analysis. *Geochem Geophys Geosyst* 20, 974–991. <https://doi.org/10.1029/2018GC007911>
18. **Agrawal, M.***, Pulliam, J., Sen, M.K., Gurrola, H., 2015b. Lithospheric structure of the Texas-Gulf of Mexico passive margin from surface wave dispersion and migrated Ps receiver functions. *Geochem Geophys Geosyst* 16, 2221–2239. <https://doi.org/10.1002/2015GC005803>
19. **Agrawal, M.***, Pulliam, J., Sen, M.K., Dutta, U., Pasyanos, M.E., Mellors, R., 2015a. Crustal and uppermost mantle structure in the Middle East: assessing constraints provided by jointly modelling Ps and Sp receiver functions and Rayleigh wave group velocity dispersion curves. *Geophysical Journal International* 201, 783–810. <https://doi.org/10.1093/gji/ggv050>

CONFERENCE PAPERS

1. Gupta, R. K., **M. Agrawal** and S. K. Pal (2021), [Inversion of HVSR Curves using Monte-Carlo Global Optimization Technique for Seismic Site Characterization](#), *3rd Asia Pacific Meeting on Near Surface Geoscience & Engineering at Chiang Mai (Thailand)*, [10.3997/2214-4609.202071043](https://doi.org/10.3997/2214-4609.202071043).
2. **Agrawal, M.**, J. Pulliam, M.K. Sen, U. Dutta, R. Ghosh, F. Sepulveda, R. Mellors, and M. Pasyanos (2012), Joint, non-linear modeling of receiver functions, surface wave dispersion and waveforms with formal assessments of constraints. *Monitoring Research Review, Albuquerque, New Mexico*. https://digital.library.unt.edu/ark:/67531/metadc829526/m2/1/high_res_d/1050499.pdf
3. Gupta, R. K., Saurabh, S. K. Pal*, **M. Agrawal** and M. K. Das (2018), Shear Wave Velocity by Joint Inversion of Horizontal-to-Vertical Spectral Ratios and Dispersion Curves, *Indian Society of Engineering Geology*, 14-1, 13.
4. Mallick, S.*, P.K. Mukhopadhyay, A. Dwivedi, and **M. Agrawal** (2009). A cost-effective monitoring strategy for carbon-sequestered deep saline aquifer. *Geohorizon*, http://www.spgindia.org/geodec_09/mallick.pdf.

CONFERENCE PRESENTATIONS AND PUBLISHED ABSTRACTS

1. Hitank Kasaundhan, Dhiraj Kumar Singh, and **Mohit Agrawal** (2023), Seismic Investigation of the Lithospheric Anisotropy beneath the Indo-Burma Ranges from Harmonic Decomposition of Receiver Functions, National Conference on Geophysical Advances-Natural Resource Exploration, Energy Security and Geohazards (CGA 2023), Indian Institute of Technology (Indian School of Mines), Dhanbad, India.
2. Das, M. K., **Agrawal, M.**, & Patel, A. (2023), Crust and upper mantle velocity structure beneath the Chhotanagpur Plateau, India using waveform modeling of Shear-Coupled PL waves and other phases, Seismological Society of America (SSA), San Juan, Puerto Rico, USA.
3. Das, M. K., **Agrawal, M.**, Sachin, K., & Pulliam, J. (2023), A seismic investigation of lithospheric seismic structure beneath the Shillong Plateau and adjoining regions in N-E India by jointly fitting of receiver functions and dispersion curves, Seismological Society of America (SSA), San Juan, Puerto Rico, USA.
4. Singh, D. K., **M. Agrawal**, O.P. Mishra and M. K. Sen (2023), Constraining Shear Wave Velocity Structure in Northeastern Indian Region using Ambient Noise Tomography, CGA conference, Indian Institute of Technology (Indian School of Mines), Dhanbad, India.
5. Kasaundhan, H. and **M. Agrawal** (2023), Seismic investigation of the Lithospheric Anisotropy beneath the Indo-Burma Ranges from Harmonic Decomposition of Receiver Functions, CGA conference, Indian Institute of Technology (Indian School of Mines), Dhanbad, India.

6. Gupta, R.K., **M. Agrawal** and S.K. Pal (2022), Recent Advances in Earth Sciences with Special Emphasis - Natural Hazard: Joint Modelling of Horizontal-to-Vertical Spectral Ratios and Dispersion Curves for Seismic Site Characterization of Dhanbad City (India), North-Eastern Hill University (NEHU), Shillong.
7. Kumar, S., Pulliam, J., and **Agrawal, M.** (2022), Anisotropic layering beneath Hispaniola Island from harmonic decomposition modeling of receiver functions, American Geophysical Union (AGU) fall meeting 2022, Chicago, IL, USA.
8. Shams, R. and **M. Agrawal** (2022), Recent Advances in Earth Sciences with Special Emphasis - Natural Hazard: 1D Non-Linear Seismic Ground Response Analysis for Various Locations in Dhanbad City, Jharkhand, India, North-Eastern Hill University (NEHU), Shillong.
9. Shams, R. and **M. Agrawal** (2022), Recent Advances in Earth Sciences with Special Emphasis - Natural Hazard: Seismic Hazard Analysis of Kishanganj (India) Using Probabilistic Approach, North-Eastern Hill University (NEHU), Shillong.
10. Rasool, Y. and **M. Agrawal** (2022), Recent Advances in Earth Sciences with Special Emphasis - Natural Hazard: Evaluation of Seismic Hazard for Kishanganj, Bihar: Deterministic Approach and Comparison of Seismic Declustering Methods for Bihar-Nepal Himalayan Region (India), North-Eastern Hill University (NEHU), Shillong.
11. Shams, R. and **M. Agrawal** (2021), Frontiers of Geosciences Research Conference (FGRC) 2021: Analysis of Seismic Attenuation Characteristics of Chhotanagpur Plateau, India, Physical Research Laboratory, Ahmedabad.
12. Rasool, Y. and **M. Agrawal** (2021), Frontiers in Geosciences Research Conference at PRL (2021): Comparison of Seismic Declustering Methods for Bihar-Nepal Himalayan Region, Physical Research Laboratory, Ahmedabad.
13. Rasool, Y. and **M. Agrawal** (2021), International Conference on Recent Advances in Geotechnics-2021: Deterministic Seismic Hazard Assessment for Kishanganj, Bihar, India, NHPC, Faridabad, Haryana.
14. Das, M. K. and **M. Agrawal** (2021), Frontiers in Geosciences Research Conference (FGRC) 2021: Lithospheric Velocity Structure beneath The Chhotanagpur Plateau, India Using Waveform Modeling of Shear-Coupled PL Wave, Physical Research Laboratory, Ahmedabad. India.
15. Gupta, R. K., **M. Agrawal** and S. K. Pal (2021), Inversion of HVSR Curves using Monte-Carlo Global Optimization Technique for Seismic Site Characterization, 3rd Asia Pacific Meeting on Near Surface Geoscience & Engineering at Chiang Mai (Thailand), [10.3997/2214-4609.202071043](https://doi.org/10.3997/2214-4609.202071043).
16. Kumar, S., **M. Agrawal**, J. Pulliam, E. P. Rivera and V. A. Huerfano (2020), Crustal Structure Beneath the Dominican Republic Revealed by P-Wave Receiver Functions, 36th International Geological Congress (IGC) conference, Delhi, India.
17. Das, M. K., **Agrawal, M.**, & Patel, A. (2019), Seismic evidence of thickened crust beneath eastern part of Chhotanagpur Plateau, India, Seismological Society of America (SSA), Seattle, Washington, USA.
18. **Agrawal, M.**, J. Pulliam and M.K. Sen (2019), Estimating depths to subsurface discontinuities using receiver function velocity analysis, Geophysical Research Abstracts Vol. 21, EGU2019-977, 2019 EGU General Assembly 2019, Vienna, Austria.
19. Kumar, S., and **M. Agrawal** (2018), Lithospheric structure of Eastern Dharwar Craton by Jointly modelling Ps and Sp receiver functions and Rayleigh wave group velocity dispersion curves, Emerging trends in Geophysical research for Make-in-India (ETGRMI), Indian Institute of Technology (Indian School of Mines), Dhanbad, India.
20. Kumar, S., **M. Agrawal**, J. Pulliam, E. P. Rivera and V. A. Huerfano (2018), Moho depth and Bulk Vp/Vs ratio variation in the Dominican Republic from teleseismic Receiver functions., 40th annual

convention, Seminar and Exhibition on "Exploration Geophysics", Association of Exploration Geophysicists (AEG), Indian Institute of Technology Bombay (IIT Bombay), Powai, Mumbai, India.

21. Gupta, R. K., **M. Agrawal**, S. K. Pal, R. Kumar and Saurabh (2018), Site Characterization Through Integrated Approach of HVSR, Dispersion Curves and Electrical Resistivity Tomography, 40th annual convention, Seminar and Exhibition on "Exploration Geophysics", Association of Exploration Geophysicists (AEG), Indian Institute of Technology Bombay (IIT Bombay), Powai, Mumbai, India.
22. Soni, Y. and **M. Agrawal** (March, 2018), Lithospheric Temperature Variations using Surface Waves, Emerging trends in Geophysical research for Make-in-India (ETGRMI), Indian Institute of Technology (Indian School of Mines), Dhanbad, India.
23. Das, M. K. and **M. Agrawal** (March, 2018), Estimation of Moho Depth and Bulk V_p/V_s Ratios Beneath Texas's Gulf of Mexico Using H-k Stacking Method, Emerging trends in Geophysical research for Make-in-India (ETGRMI), Indian Institute of Technology (Indian School of Mines), Dhanbad, India.
24. Ranjan R. and **M. Agrawal** (2018), Structure health monitoring in IIT(ISM) Dhanbad using Ambient noise, 55th annual convention, Indian Geophysical Union, Bhopal.
25. **Agrawal M.** (2018), Uncertainty analysis in the joint Non Linear modelling of receiver functions , surface wave dispersion and shear coupled-PL phases, Emerging trends in Geophysical research for Make-in-India (ETGRMI), Indian Institute of Technology (Indian School of Mines), Dhanbad, India.
26. Sharma S., P. Pawar, **M. Agrawal** and S.K. Pal (2018), Seismic Site Characterization Using Ambient Noise Technique for IIT(ISM), Dhanbad, Jharkhand, Association of Exploration Geophysicists (AEG), Indian Institute of Technology Bombay (IIT Bombay), Powai, Mumbai, India.
27. Kumar, S., G. Ntuli, **M. Agrawal**, J. Pulliam, E. Polanco Rivera and V.A. Huerfano (2018), Crustal Structure in the Dominican Republic from Receiver Function Analysis, Seismological Society of America (SSA), New Orleans, Louisiana, USA.
28. Kumar, S. and **M. Agrawal** (2017), Crustal and Uppermost Mantle Seismic Structure of Eastern Dharwar Craton by Jointly Modelling Teleseismic Receiver Functions and Rayleigh Wave Group Velocity Dispersion Curves, Indian Geophysical Union, Hyderabad, INDIA.
29. Das, M. K., **M. Agrawal**, and J. Pulliam (2017), Determination of Crustal Thicknesses and V_p/V_s Ratios along Texas's Gulf of Mexico Using H- κ Stacking, Indian Geophysical Union, Hyderabad, INDIA.
30. **Agrawal, M.**, J. Pulliam, D. Barman, M.K. Sen, and S. Grand (2017), Joint Velocity Analysis of P_s and S_p Receiver Functions and Its Application on the Eastern Flank of Rio Grande Rift, American Geophysical Union, New Orleans, Louisiana, USA.
31. **Agrawal, M.**, J. Pulliam, M. K. Sen, and S. Grand (2015), Lithospheric structure of the eastern flank of the Rio Grande Rift via receiver function velocity analysis, *American Geophysical Union, San Francisco, California*.
32. **Agrawal, M.**, J. Pulliam, M. K. Sen, and H. Gurrola (2015), Receiver Functions and Surface Wave Dispersion Modeling of the Crust and Upper Mantle beneath Texas' Gulf Coast, *Gulf Coast Association of Geological Societies, Houston, Texas*.
33. **Agrawal, M.**, J. Pulliam, M. K. Sen, and S. Grand (2015), Seismic Investigation of Edge Driven Convection Associated with the Rio Grande Rift by velocity analysis of P_s and S_p receiver functions, *SEG/AAPG Student Exposition, Houston, Texas*.
34. Ntuli, G., J. Pulliam, **M. Agrawal**, V. Huerfano, and E. P. Rivera (2015), P_s receiver function imaging of crustal structure and Moho topography beneath the Northeast Caribbean, *American Geophysical Union, San Francisco, California*.
35. Gurrola, H., J. Pulliam, and **M. Agrawal** (2015), Geophysical investigations of the crust and mantle beneath Texas' Gulf Coastal Plain, *American Geophysical Union, San Francisco, California*.
36. Ntuli, G., J. Pulliam, **M. Agrawal**, V. Huerfano, and E. P. Rivera (2015), P_s receiver function imaging

of the Northeast Caribbean plate boundary, *Gulf Coast Association of Geological Societies, Houston, Texas*.

37. Ntuli, G., J. Pulliam, **M. Agrawal**, V. Huerfano, and E. P. Rivera (2015), Ps receiver function imaging of the Northeast Caribbean plate boundary, *SEG/AAPG Student Exposition, Houston, Texas*.
38. Ntuli, G., J. Pulliam, **M. Agrawal**, V. Huerfano, and E. P. Rivera (2015), Ps receiver function imaging of the Northeast Caribbean plate boundary, Rocky Mountain Rendezvous, *Laramie, Wyoming*.
39. **Agrawal, M.**, J. Pulliam, M. K. Sen, and H. Gurrola (2014), Crustal and uppermost mantle structure of Texas's Gulf Coastal Plain from surface wave dispersion and migrated Ps receiver functions, *American Geophysical Union, San Francisco, California*.
40. Ghosh, R., M. K. Sen, P. Mandal, J. Pulliam and **M. Agrawal** (2014), Seismic Velocity Assessment In The Kachchh Region, India, From Multiple Waveform Functionals, *American Geophysical Union, San Francisco, California*.
41. **Agrawal, M.**, J. Pulliam, M. K. Sen, and H. Gurrola (2014), Lithospheric Earth Structure of Texas-Gulf of Mexico from Surface Wave Dispersion and Migrated Ps Receiver Functions, *SEG/AAPG Student Exposition, Houston, Texas*.
42. **Agrawal, M.**, J. Pulliam, M. K. Sen, and H. Gurrola (2014), Seismic structure of Texas-Gulf coastal plain from surface wave dispersion and migrated Ps receiver functions, *Seismological Society of America, Anchorage, Alaska*.
43. **Agrawal, M.**, J. Pulliam, and M. K. Sen (2013), Seismic imaging of the crust and upper mantle beneath the Texas-Gulf of Mexico margin by fitting surface wave dispersion curves and common conversion point stacking of Ps receiver functions, *American Geophysical Union, San Francisco, California*.
44. **Agrawal, M.**, J. Pulliam, M.K. Sen, R. Mellors, and M. Pasyanos (2013), Seismic velocity estimation in Middle East: Assessing constraints provided by jointly modeling P-to-S and S-to-P receiver functions and group velocity Rayleigh wave dispersion curves, *American Geophysical Union, SEG/AAPG student Exposition, Houston, Texas*.
45. **Agrawal, M.**, J. Pulliam, M.K. Sen, U. Dutta, R. Ghosh, F. Sepulveda, R. Mellors, and M. Pasyanos (2012), Joint, non-linear modeling of receiver functions, surface wave dispersion, and waveforms with formal assessments of constraints. *Monitoring Research Review, Albuquerque, New Mexico*.