

Curriculum Vitae of Pallabee Choudhury

Current Position

Scientist- D

Contact details

Institute of Seismological Research (ISR)
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Specialization

Strong motion seismology, Seismic hazard assessment, Ground motion simulation, Site-specific and microzonation studies, Site characterization, Crustal deformation, GPS geodesy

Educational qualification

- M.Sc (1st Class) in Physics from Tezpur University (1999), Assam, India
- PhD in Geophysics from Tezpur University (2006), Assam, India on “Solution of certain two-dimensional inverse problems in potential theory and their application in Exploration Geophysics”

Ph.D. Supervision

1. Dr. Vasu Pancholi, thesis title “Geological, Geomorphological and Geotechnical Investigations for Estimation of Seismic Hazard for the Capital city, Gandhinagar, Gujarat” awarded by Gujarat university, Ahmedabad in 2019.
2. Dr. Avinash Chouhan, thesis title “Lithospheric structure and Geodynamic evolution of the Cambay Rift and adjoining region: insights from Gravity data” awarded by IIT-ISM, Dhanbad in 2022.

Publications in SCI journals

1. **Pallabee Choudhury**, Sumer Chopra and G. Srijayanthi (2025), Seismology and earthquake preparedness in Gujarat: advancements after the 2001 Bhuj Earthquake, Journal of Geological Society of India.
2. Chouhan A. K., **Choudhury P.**, Pal S. K. (2023) Sedimentary thickness and upper crustal structure of the north Cambay rift, India deduced from gravity data: new evidence of pre-trappean sediments, Journal of Geological Society of India, 99, 773-782.
3. **Choudhury P.**, Kamra C., Kumar S., Roy K. S., Rao K. M., Chopra S., Kumar M. R. (2022) Occurrence of small to moderate magnitude earthquakes in Kachchh intraplate zone: A special emphasis to the 2020 Bhachau earthquake, Journal of Asian Earth Sciences: X, doi: 10.1016/j.jaesx.2022.100089.
4. **Choudhury P.**, Roy K. S., Kamra C., Chopra S. (2022) Development of empirical relationship between the observed and the estimated ground acceleration values of small to moderate earthquakes in northwest (Gujarat) and northeast (NE) regions of India, Geomatics, Natural Hazards and Risk, 13:1, 364-389.

5. Pancholi V., Dwivedi V., Bhatt N. Y., **Choudhury P.**, Chopra S. (2020) Geotechnical Investigation for Estimation of Liquefaction Hazard for the Capital City of Gujarat State, Western India, *Geotech Geol Eng*, doi: 10.1007/s10706-020-01454-8.
6. Kumar V., Chopra S., **Choudhury P.**, Kumar D. (2020) Estimation of near surface attenuation parameter kappa (κ) in Northwest and Northeast Himalaya region, *Soil Dynamics and Earthquake Engineering*, doi: 10.1016/j.soildyn.2020.106237.
7. Chouhan A. K., **Choudhury P.**, Pal S. K. (2020) New evidence for a thin crust and magmatic underplating beneath the Cambay rift basin, Western India through modelling of EIGEN-6C4 gravity data, *Journal of Earth System Science*, doi: 10.1007/s12040-019-1335-y.
8. Chouhan A. K., Singh D., Pal S. K., **Choudhury P.** (2020) Delineation of subsurface geological fractures in the Cambay rift and surrounding regions of NW India: an integrated approach using satellite derived EIGEN-6C4 gravity data, *Geocarto International*, doi: 10.1080/10106049.2020.1716395.
9. **Choudhury P.**, Chopra S., Kamra C., Das A. (2019) New insight into recent earthquake activity in North Cambay basin, western India: Seismological and Geodetic perspectives, *Bulletin of Seismological Society of America*, doi: 10.1785/0120190126.
10. Gahalaut V. K., Gahalaut K., Dumka R. K., **Choudhury P.**, Yadav R. K. (2019) Geodetic Evidence of High Compression Across Seismically Active Kachchh Paleorift, India, *Tectonics*, doi: 10.1029/2019TC005496.
11. **Choudhury P.**, Gahalaut K., Dumka R., Gahalaut V. K., Singh A. K., Kumar S. (2018) GPS measurement of land subsidence in Gandhinagar, Gujarat (Western India) due to groundwater depletion, *Environmental Earth Sciences*, doi: 10.1007/s12665-018-7966-5.
12. **Choudhury P.**, Chopra S., Kumar M. R. (2018) A review of seismic hazard assessment of Gujarat: A highly active intra-plate Region, *Earth-Science Reviews*, 187, 205-218.
13. Dumka R. K., **Choudhury P.**, Gahalaut V. K., Gahalaut K. ND Yadav R.K. (2018) GPS measurements of deformation caused by seasonal filling and emptying cycles of four hydroelectric reservoirs in India. *BSSA*, <https://doi.org/10.1785/0120170355>.
14. Jade S., Shringeshwara T. S., Kumar K., **Choudhury P.**, Dumka R. K. and Bhu H. (2017) India plate angular velocity and contemporary deformation rates from continuous GPS measurements from 1996 to 2015, *Scientific Reports*, 7: 11439, DOI:10.1038/s41598-017-11697-w.
15. Chopra S., Kumar V., **Choudhury P.**, Yadav R. B. S. (2017) Site Classification of Indian Strong Motion Network using Response Spectral Ratios, *Journal of Seismology*, DOI: 10.1007/s10950-017-9714-9.
16. **Choudhury P.**, Chopra S., Roy K. S., Sharma J. and Rastogi B. K. (2017) Revisiting the 1956 Anjar Earthquake in Western India: Empirical Green's Function Approach, *Bulletin of Seismological Society of America*, doi: 10.1785/0120160153.
17. **Choudhury P.**, Chopra S., Roy, K. S. and Sharma J. (2016) Ground motion modelling in the Gujarat region of Western India using empirical Green's function approach, *Tectonophysics*, 675, 7–22.
18. **Choudhury P.**, Chopra S., and Roy K.S. (2016) Site Classification for Strong Motion Stations in Gujarat, India Using Response Spectral Ratio, *Soil Dynamics and Earthquake Engineering*, 87, 138-150.

19. Chopra S., Chang T. M., Saikia S., Yadav R. B. S., **Choudhury P.** and Roy K. S. (2014) Crustal structure of the Gujarat region, India: New constraints from the analysis of teleseismic receiver functions, *Journal of Asian Earth Sciences*, 96: 237–254.
20. **Choudhury P.**, Chopra S., Roy K. S. and Rastogi B. K. (2014) A review of strong motion studies in Gujarat state of western India, *Natural Hazards*, 71: 1241-1257.
21. **Choudhury P.**, Catherine J. K., Gahalaut V. K., Chopra S., Dumka R. and Roy K. S. (2013) Post Seismic deformation associated with the 2001 Bhuj earthquake, *Natural Hazards*, 65:1109–1118.
22. Rastogi B. K., Aggrawal S. K., Rao N. and **Choudhury P.** (2013) Triggered/migrated seismicity due to the 2001 Mw7.6 Bhuj earthquake, Western India, *Natural Hazards*, 65: 1085-1107.
23. Chopra S., Kumar D., Rastogi B. K., **Choudhury P.**, Yadav R. B. S. (2013) Estimation of site amplification functions in Gujarat region, India, *Natural Hazards*, 65: 1135-1155.
24. Chopra S., Kumar D., Rastogi B. K., **Choudhury P.** and Yadav R. B. S. (2013) Estimation of seismic hazard in Gujarat region, India, *Natural Hazards*, 65:1157-1178.
25. Mahesh P., Catherine J. K., Gahalaut V. K., Kundu B., Ambikapathy A., Bansal A., Premkishore L., Narsaiah M., Ghavri S., Chadha R. K., **Choudhury P.**, Singh D. K., Singh S. K., Kumar S., Nagarajan B., Bhatt B. C., Tiwari R. P., Kumar A., Kumar A., Bhu H., Kalita S. (2012) Rigid Indian plate: Constraints from GPS measurements, *Gondwana Research*, 22(3): 1068-1072.
26. Kumar S., Chopra S., **Choudhury P.**, Singh A. P., Yadav R. B. S. and Rastogi B. K. (2012) Ambient Noise Levels in Gujarat State (India) Seismic Network, *Journal of Geomatics, Natural Hazard and Risk*, **3(4): 342-354**.
27. Chopra S., Kumar D., **Choudhury P.** and Yadav R. B. S. (2012) Stochastic finite fault modelling of Mw 4.8 earthquake in Kachchh, Gujarat, India, *Journal of Seismology*, 16:435–449.
28. Chopra S., Kumar D., Rastogi B. K., **Choudhury P.**, Yadav R. B. S. (2012) Deterministic seismic scenario in Gujarat, India. *Natural Hazards*, 60: 517-540.
29. Chopra S. and **Choudhury P.** (2011) A study of Response spectra for different geological conditions in Gujarat, *Soil dynamics and earthquake engineering*, 31: 1551-1564.

Book /Monograph chapter

- S Chopra, **P Choudhury**, R Nikam, P Chaudhary, H Limbachiya, V Joshi (2023) Use of Geophysical Techniques in Seismic Hazard Assessment and Microzonation Geohazards: Analysis, Modelling and Forecasting, 73-87.
- Pancholi V., Dwivedi V. K., Sairam B., **Choudhury P.**, Chopra S., and Bhatt N. Y., (2022) Engineering Geological Mapping for Seismic Hazard Assessment of the Gandhinagar City, Western India, Published in *Earthquake Geotechnics, Select Proceedings of 7th ICRAAGEE 2021*, Edited by T. G. Sitharam, Sreevalsa Kolathayar and Ravi Jakka, doi: 10.1007/978-981-16-5669-9.
- Magrin, A., Parvez I., Vaccari F., Peresan A., Rastogi B. K., Cozzini S., Bisignano D., Romanelli F., Ashish, **Choudhury P.**, Roy K. S., Mir R. R., Panza G. F. (2016) Neo-deterministic definition of seismic and tsunami hazard scenarios for the territory of Gujarat (India), Published as a Chapter in the book: "Earthquakes and their impact on Society" (Springer), 1st ed. 2016, XXIV, 706 p., DOI 10.1007/978-3-319-21753-6, ISBN 978-3-319-21752-9 .

- Rastogi, B. K., **Choudhury P.**, Dumka R., Sreejith K.M. and Majumdar T. J. (2012) Stress pulse migration by viscoelastic process for long-distance delayed triggering of shocks in Gujarat, India, after the 2001 Mw 7.7 Bhuj earthquake, in Extreme Events and Natural Hazards: The Complexity Perspective, Geophys. Monogr. Ser., vol. 196, edited by A. S. Sharma et al. 63–73, AGU, Washington, D. C., doi:10.1029/2011GM001061.

Publications in non-SCI but refereed journals

1. **Choudhury P.** and Kumar M. R. (2016) The Institute of Seismological Research - A Premier Research Center for Seismology in India, Proc Indian Natn Sci Acad 82 No. 3, pp. 1049-1060.
2. **Choudhury P.** and Rastogi B. K. (2012) Significant contributions of Institute of Seismological Research (ISR), Proc Indian Natn Sci Acad 78 No. 3, pp. 585-590.
3. **Choudhury P.**, Rastogi B. K. and Chopra S. (2011) Advances in Generating Design Ground Motion, Proceedings of the Post-SMiRT conference seminar on advances in seismic design of structures, systems and components of nuclear facilities, 14-15 November, 2011, BARC, Mumbai, India, pp. 60.
4. **Choudhury P.**, Kumar A. and Laskar S.K. (2005) Identification of EW trending faults and determination of sedimentary thickness in Shillong-Mawlong area by analysis of magnetic data, Journal of Geophysics, Vol. XXVI, No. 3, p. 139-150.
5. Laskar S.K. and **Choudhury P.** (2005) Downward Continuation of Two-dimensional potential field to a concave lower boundary, Indian Journal of Petroleum Geology, Vol. 14, No. 1, p.41-66.
6. Laskar S.K., Bhattacharyya A.K. and **Choudhury P.** (2003) Identification and Depth-Determination of Subsurface Magnetic Causatives in Lanka-Kaki area of Kopili Valley, Assam, Journal of Geophysics, Vol XXIV, No.1, p.45–52.
7. Laskar S.K., Bhattacharyya A.K. and **Choudhury P.** (2003) A Technique for computation of Analytical values of certain surface integrals used in up-continuation of potential fields from boundary data, ONGC Bulletin, Vol. 40 No.2, p.81-91.

Ongoing/ completed projects

1. Definition of seismic and tsunami hazard scenarios by means of Indo-European e-infrastructure, sponsored by Autonomous Region of Friuli Venezia Giulia, Italy.
2. Crustal Deformation and GPS studies in Kachchh and West Narmada Zone, sponsored by MoES, New Delhi.
3. Surface Deformation Mapping Using Differential SAR Interferometry in Kachchh, sponsored by ISRO, Ahmedabad.
4. Surface Deformation Mapping using Differential SAR Interferometry and Earthquake Precursory studies in Kachchh, sponsored by ISRO, Ahmedabad.
5. Gujarat Infrastructure Development Board, Govt. of Gujarat sponsored project entitled “Seismic Microzonation of Dholera Special Investment Region (SIR).”
6. Seismic Hazard Assessment of Gujarat International Finance Tec-City (GIFT) Area, sponsored by Gujarat International Finance Tec City Co. Ltd., Gujarat.
7. Site-Specific Seismic Hazard Analysis for site selection for statue of unity (180 m high), highest monument in the world for Sardar Sarovar Narmada Nigam Limited, a Govt. of Gujarat Undertaking.
8. Site-Specific Seismic Hazard Assessment at Kakrapar and Rawatbhata Nuclear Power Plants.

9. Site-Specific Seismic Hazard Assessment of Sant Nagri, Sabarkantha for Gujarat Pavitra Yatra Dham Board.
10. Seismic Hazard Assessment of Bhadbhut barrage.
11. Indo-Norwegian project “Intraplate seismicity in India and Norway: Distribution, properties and causes (IPSIN)” sponsored by MoES, New Delhi, India.
12. Seismic Hazard Assessment of M/S Adani solar power and windmill project in Rann of Kachchh.
13. Seismic microzonation of Amritsar, Meerut, Lucknow, Kanpur, Agra, Varanasi, Patna and Dhanbad in India.
14. Site-specific seismic hazard assessment of PVC and Naptha plants at Mundra for M/S Adani.
15. Site-specific seismic hazard assessment for LNG tanks at Dahej for M/S L & T.
16. Site specific seismic study for the solar PV plant located in Bet Zone of Great Rann of Kachchh, Gujarat
17. Site specific Seismic Hazard Assessment for GCPL at Dahej, Gujarat
18. Site-specific hazard assessment of Sardar Sarovar, Indira Sagar, Dharoi, Kadana, Ukai, Panam, Machhundri, Hiren, Shetrunji, Seti (Nepal) dams, Tapi barrage and Bhadbhut barrage.
19. Site-specific seismological study for National Maritime Heritage Complex, Lothal, Gujarat.
20. Site-specific hazard assessment of PSP projects at Vijaynagar, Narihall, Pane, Kandhaura, Teesta, Bilaspur, Kamapapadu, Patgaon and Musakhand.
21. Quantification of response of Birpur, Basopatti and adjacent region of Madhubani, Bihar located adjacent to central Seismic gap towards minimizing future earthquake induced damages, sponsored by MoES, New Delhi, India.