CURRICULUM VITAE

BHASKAR KUNDU

***Associate Professor,* PhD, AvH Fellow**
Former HOD (2018-2021), NIT Rourkela

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Outreach: Tectonic Geodesy Lab, YouTube, Google Scholar



RESEARCH INTERESTS

My research primarily focuses on lithospheric deformation and the mechanisms of earthquake occurrence, including great earthquake cycles, interaction, and triggering processes. Key areas of investigation include non-volcanic tremors, slow-slip events, and the deformation dynamics at plate boundaries and interiors. Additionally, I explore the interplay between earthquakes and volcanic activity, tectonic-climatic interactions, human-induced deformation, and lithosphere-ionosphere coupling. I employ a combination of field observations, remote sensing techniques, seismological and geodetic measurements and aim to develop both kinematic and dynamic models that enhance our understanding of these intricate systems. By conducting fundamental research in tectonic geodesy, I address various natural hazards, including earthquakes, volcanic eruptions, tsunamis, and the impacts of climate change. Finally, my goal is to contribute to a safer and more sustainable society through a deeper understanding of these critical geophysical processes.

Currently working projects:

- Earthquake Cycle and mountain building processes.
- Geodynamics of Indo-Burmese Arc and crustal deformation study across Narmada-Son Failed Rift Zone, Central India.
- Understanding great earthquake cycle and the role of rate-and-state friction dynamics using laboratory-based scaled experiments.
- Understanding endogenous processes and the effect of exogenous forces on volcanic and hydrothermal systems
- Co-seismic Ionospheric disturbance (CID) and its quantification including earthquake precursor studies
- Climate and human-induced non-tectonic seismicity modulation studies.
- InSAR modelling of Natural Hazards causing surface deformations

EDUCATIONAL QUALIFICATIONS

Ph.D., Geophysics (Tectonic Geodesy) *2013*
CSIR – National Geophysical Research Institute & Osmania University, Hyderabad

M.Sc., Applied Geology (University Gold medalist with 82.4%) *2007*
Department of Geological Sciences, Jadavpur University, Kolkata

B.Sc., Geology (Honours with 78.6%) *2005*
Department of Geological Sciences, Jadavpur University, Kolkata

EMPLOYMENT

Associate Professor *2024 – till date*
Department of Earth and Atmospheric Sciences, National Institute of Technology Rourkela

Assistant Professor Grade – I *2020 – 2024*
Department of Earth and Atmospheric Sciences, National Institute of Technology Rourkela

Assistant Professor Grade – II *2014 – 2020*
Department of Earth and Atmospheric Sciences, National Institute of Technology Rourkela

Project Scientist *2013 – 2014*
CSIR-National Geophysical Research Institute, Hyderabad

AWARDS/HONOURS:

- **INSA Associate Fellow (IAF)** at Indian National Science Academy *2026*
- **Life Member** of the Indian Society of Earthquake Science **(ISES)** *2025*
- **Humboldt Research Fellowship for Experienced Researchers** by the prestigious **Alexander von Humboldt Foundation** *2025*
- **Krishnan Gold Medal** awarded by the Indian Geophysical Union (**IGU**) *2024*
- **Life Member** of the Indian Meteorological Society (LM-3942) *2024*
- **Young Researcher Award**, in Geosciences, from Ministry of Earth Sciences (MoES)**,** Govt. of India *2022*
- **Life Fellow** of the Indian Social Science Academy **(ISSA)** *2022*
- **Research Excellence Award** for outstanding researcher by NIT Rourkela Alumni Association (NITRAA) *2019*
- **Outstanding contribution** in Reviewing (by **Journal of Asian Earth Sciences**) *2017*
- **ISES Order of Merit Award** for outstanding works in Earthquake sciences from Indian Society of Earthquake Science **(ISES)** *2015*
- All India **GATE** qualified (rank 14) *2007*
- **Promoth Nath medal**, M.Sc., Applied Geology, Jadavpur University, Kolkata *2007*
- **University Gold medal** in M.Sc., Applied Geology, Jadavpur University, Kolkata *2007*
- **CSIR-NET** Fellowship JRF/SRF *2006*
- **IIT-JAM** qualified (all India rank 32) *2005*
- **National Scholarship**, B.Sc. Geology *2005*

INVITED TALKS/LECTURES AND CONFERENCES ATTENDED

- Chaired sessions in the 9th Annual Convention on Advances in Earthquake Science (AES) *2026*
- Keynote speaker in Brainstorming workshop on Understanding Himalayan Earthquakes organized by Wadia Institute of Himalayan Geology *2025*
- Keynote speaker on Earthquakes and other Ground Movements at Hazard Assessment, Mitigation and Management workshop, organized by the ISMAA- Kolkata Chapter. *2023*
- Participated in a Scientific discussion on Lithospheric Deformation: Earthquake generation and Hazard at the Vaishwik Bharatiya Vaigyanik (VAIBHAV) summit. *2020*
- Represented NIT Rourkela at the IISF (SYPOG-Young Scientist Conclave) *2017*
- Participated in Scientific discussion at India-Turkmenistan Round Table Meeting, organized by INSA, New Delhi. *2017*
- Conference Lecture organized by Indian Society of Earthquake Science at ISR Gandhinagar *2015*
- Conference talk at Geodynamics Unit, Jawaharlal Nehru Centre for Advanced Sci. Res. *2015*
- Conference talk organized by the Department of Earth Sciences at IIT Gandhinagar *2015*
- Invited Talk organized by Geoscience Unit at IISC Bangalore *2014*
- Participated in Scientific discussion on "The tectonics of Indo-Burmese Arc region, NE-India", at Mizoram and Manipur University. *2014*
- Conference talk at Department of Earth Sciences, IIT Kanpur *2013*

EXTERNAL RESEARCH FUND RECEIVED & PROJECT HANDLED

1. Strain Estimation for Earthquake Studies in the Himalayan Arc (SEESHA) – Eastern Himalayas (*funded by ISRO*), **PI: Dr. Bhaskar Kundu,** NIT Rourkela. **(*45 lakhs INR*)** *2024-present*
2. Crustal deformation study across Narmada-Son Failed rift zone, Central India (*funded by MoES*), **PI: Dr. Bhaskar Kundu**, NIT Rourkela. (***84 lakhs INR***) *2018-2025*
3. Understanding the great earthquake cycle and role of rate-and-state friction dynamics using Laboratory based scaled experiments (*funded by MoES)*, **PI: Dr. Bhaskar Kundu**, NIT Rourkela. (***34 lakhs INR***) *2019-2023*
4. Characterizing the 'life and death cycle' of slow-moving landslides (SMLs) through the integration of multi-sensor remote sensing measurements and hydro-mechanical modeling (funded by ISRO), **PI: Dr. Bhaskar Kundu,** NIT Rourkela; **Co-PIs: Prof. Susanta Kumar Samanta,** Jadavpur University and **Dr. Vikas Kumar Das**, NIT Rourkela. (***40 lakhs INR,*** *funding to be sanctioned from 2025)*
5. PROWLER: Probing Regolith Water and Lunar Dynamics via an Integrated Examination of the Chandrayaan-3 landing site (*Submitted to ISRO for funding*) **PI: Dr. Bhaskar Kundu,** NIT Rourkela; **Co-PI: Prof. Vikas Kumar Das,** NIT Rourkela.
6. Deciphering Venus's Geodynamics: A Comprehensive Investigation of Corona-driven Geodynamics, Ongoing Plume-Tectonic activity, and the Stagnant Lid Enigma. (*Submitted to ISRO for funding*) **PI: Dr. Bhaskar Kundu,** NIT Rourkela; **Co-PI: Dr. Dibyashakti Panda**, Central University of Tamil Nadu, India.
7. FLUIDRULES – FLUID-Rock-climate coupling in cold degassing systems: Understanding reciprocaL forcing, feedbacks and Environmental impactS (*Submitted for funding at Istituto*

Nazionale di Geofisica e Vulcanologia) **PI: Dr. Paola Cusano,** *INVG*, Italy; **External Co PI: Dr. Bhaskar Kundu.**

PROFESSIONAL SERVICES

- **Reviewed papers** published in national and international journals (*Communication Earth and Environment, Journal of Geophysical Research: Solid Earth, Scientific Reports, Frontiers in Earth Science, Journal of Volcanology and Geothermal Research, Geosciences Frontiers, Bull. Seism. Soc. Am, Journal of Asian Earth Science, Journal of Earth System Science, Natural Hazards, International Journal of Earth and Atmospheric Science, Seismological Research Letter, Anal Geophysics, Gondwana Research, Earth and Planetary Science Letters, Geophysical Journal International, Geophysical Research Letters, Tectonophysics, Journal of Geophysical Research, Current Science*).
- **Reviewed project proposals** from both National (*Ministry of Earth Sciences, Govt. of India*) and International (*Israel Science Foundation, French National Research Agency etc*) levels.
- Currently associated as **Review Editor** (Solid Earth Geophysics section) of ***Frontiers in Earth Science***
- Acted as **External subject expert** for M.Tech thesis evaluation process, May **2023**: Department of Centre for Ocean, River, Atmosphere and Land Sciences **(CORAL), IIT Kharagpur.**
- **Doctoral Scrutiny Committee member** for PhD students' evaluation processes within and outside the department at NIT Rourkela (**2021-present**).
- **Member of Curriculum Development and Institute website committee**, NIT Rourkela (**2022-2025**)
- **Member of GNSS purchasing and Technical bid evaluation committee** at ISR, Gandhinagar
- **Member of the Committee** for the assessment of Local Content (Make in India component) in GNSS/GPS equipment with MET sensors to the National Center for Seismology (NCS) in the Ministry of Earth Sciences under Secretary to the Government of India **(2024)**

COLLABORATORS

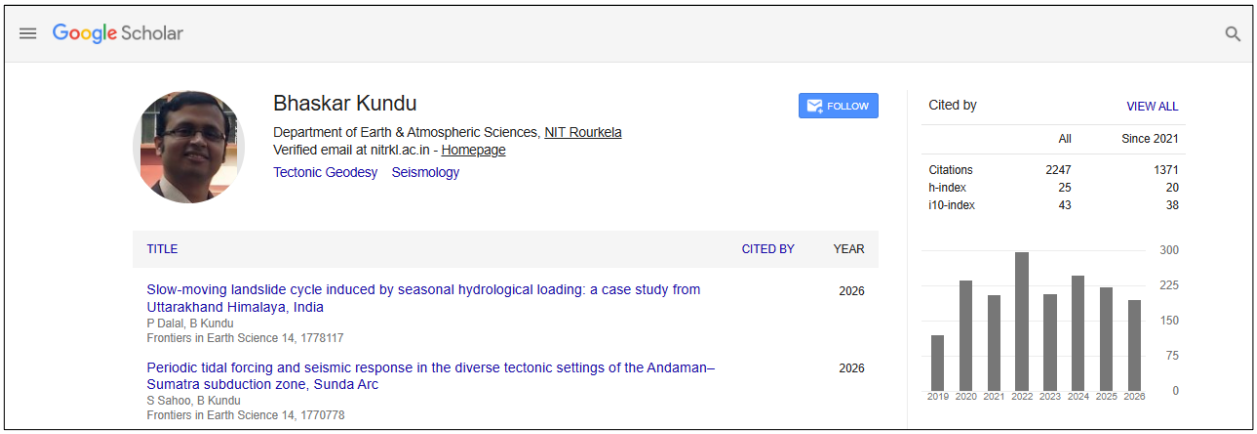
National	***Affiliations***
V.K. Gahalaut, K. Gahalaut & Rajeev K. Yadav	*(CSIR-National Geophysical Research Institute, Hyderabad, India)*
Kamesh Raju	*(CSIR-National Institute of Oceanography, Goa, India)*
S.K. Samanta	(*Department of Geological Sciences, Jadavpur University, Kolkata, India)*
Rakesh K. Dumka	*(Institute of Seismological Research, Gandhingar)*
Arun K. Singh	*(Department of Mechanical Engineering, VNIT, Nagpur)*
Sreejith K. M.	*(Space Applications Center, ISRO)*

International	***Affiliations***
Denis Legrand	*(Instituto de Geofisica, Ciudad Universitaria, UNAM, Mexico)*
Roland Burgmann	*(University of California, Berkeley, USA)*
Abhijit Ghosh	*(Department of Earth Sciences, University of California Riverside, USA)*
Birendra Jha	*(Chemical Engineering and Materials Science, University of Southern California, USA)*
Claude Rangin	*(CNRS Geoazur Nice Sophia Antipolis University, France)*
Lian Xue	*(University of Peking, China)*
Late Hugo Perfettini	*(ISTerre, France)*
Kosuke Heki	*(Department of Earth and Planetary Sci., Hokkaido Univ. Japan)*

Shuanggen Jin	*(School of Surveying and Land Information Engineering, Henan Polytechnic University, China)*
Simona Petrosino	*(Technologist Istituto Nazionale di Geofisica e Vulcanologia (INGV), Italy)*
Eric O. Lindsey	*(Earth Observatory of Singapore, Nanyang Technological University, Singapore)*
Frank Zwaan	*(GFZ German Research Centre for Geosciences, Telegrafenberg, 14473 Potsdam, Germany)*
Joseph D. Huba	*(Syntek Technologies, Fairfax, Virginia, USA)*
Yuankun Xu	*(Department of Earth and Planetary Science, University of California, Berkeley)*
Tony Cook	*(Department of Physics, Prifysgol Aberystwyth University, United Kingdom)*
Anny Cazenave	*(Laboratoire d'Etudes en Géophysique et Océanographie Spatiales, Toulouse, France)*
Ya-Ju Hsu	*(Institute of Earth Sciences, Academia Sinica, Taiwan)*
Asaf Inbal	*(School of the Environment and Earth Science, Tel Aviv University, Israel)*

PUBLICATIONS AT A GLANCE (Pear reviewed articles – 83)

1.	Nature communications (IF = 17.69) – 2	20.	BSSA (IF = 3.14) – 3
2.	Earth-Science Reviews (IF = 12.04) – 1	21.	JGR – Space Physics (IF = 3.11) – 2
3.	Geoscience Frontiers (IF = 8.9) – 2	22.	J. Volcanol. Geotherm. (IF = 2.98) – 1
4.	Engineering Geology (IF = 8.4) - 1	23.	Bulletin of Volcanology (IF = 2.9) – 1
5.	Geology (IF = 6.32) – 1	24.	Advances in Space Research (IF = 2.8) – 1
6.	Gondwana Research (IF = 6.15) – 2	25.	Phys. Earth Planet. Inter. (2.75) – 2
7.	Earth and Planetary Science Letters (IF = 5.78) – 1	26.	Journal of Geodynamics (IF = 2.67) – 3
8.	American Journal of Science (IF = 5.62) – 1	27.	Pure and Applied Geophysics (IF = 2.64) – 1
9.	Geophysical Research Letters (IF = 5.58) – 3	28.	Geodesy and Geodynamics (IF = 2.4) – 1
10.	Tectonics (IF = 5.26) – 3	29.	Geological Journal (IF = 2.13) – 1
11.	Scientific Reports (IF = 5.0) – 8	30.	J. Earth Syst. Sci. (IF = 1.91) – 3
12.	Geomatics Natural Hazards & Risk (IF = 3.92) – 2	31.	J. Atmos. Sol-Terr. Phys (IF = 1.9) - 1
13.	Frontiers in Earth Science (IF = 3.66) – 2	32.	Journal of Seismology (IF = 1.61) – 1
14.	Tectonophysics (IF = 3.66) – 3	33.	J. Geol. Soc. India (IF = 1.47) – 4
15.	Geosphere (IF = 3.4) – 1	34.	Current science (IF = 1) – 4
16.	Journal of Asian Earth Sciences (IF = 3.37) – 7	35.	Geosystems and Geoenvironment – 1
17.	Geophysical Journal International (IF = 3.35) – 7	36.	Earth Science Frontiers – 1
18.	Icarus (IF = 3.33) – 1	37.	Front. Young Minds – 1
19.	Natural hazards (IF = 3.16) – 1	38.	Earth Systems, Resources, and Sustainability – 1



PEER REVIEWED PUBLICATIONS (https://scholar.google.com/)

(a) SCI Papers (83)

2026

1. Sahoo, S., & ***Kundu, B.*** (2026). Periodic tidal forcing and seismic response in the diverse tectonic settings of the Andaman–Sumatra subduction zone, Sunda Arc. ***Frontiers in Earth Science***, 14, 1770778. https://doi.org/10.3389/feart.2026.1770778
2. Dalal, P., & ***Kundu, B.*** (2026). Slow moving landslide cycle induced by seasonal hydrological loading: Case study from Uttarakhand Himalaya, India. ***Frontiers in Earth Science***. (accepted May 4, 2026).
3. Dalal, P., Sahoo, S., ***Kundu, B.,*** Dash, P. S., Naik, A., & Jin, S. (2026). Thermal weathering and fragmentation insights on aristarchus crater. ***npj Space Exploration***, 2(1), 16. https://doi.org/10.1038/s44453-026-00029-w
4. Ray, S., Ghosh, A., Kundu, B., & Senapati, B. (2026). Effects of plate interface frictional heterogeneities on earthquake cycle dynamics in subduction zones. ***Scientific Reports***. https://doi.org/10.1038/s41598-026-43399-7
5. Sahoo, S., & ***Kundu, B.*** (2026). Volcanic Hazards in an Evolving Earth: Monitoring Magmatic Systems, External Forcing and Beyond. Earth Systems, Resources, and Sustainability, 1(1), 44-71. https://doi.org/10.53941/esrs.2026.100004

2025

6. Ray, S., Kundu, B., Senapati, B., Ghosh, A., & Singh, A. K. (2025). Role of plate convergence rate in shaping earthquake recurrence in subduction zones. Scientific Reports, 15(1), 21227. https://doi.org/10.1038/s41598-025-04766-y
7. Dalal, P., Hari, M., Xu, Y., Senapati, B., Gautam, P., Tiwari, D. K., ... & ***Kundu, B.*** (2025). Deformation dynamics and hazard of slow-moving landslides: The 2023 Joshimath event, Uttarakhand Himalaya. ***Engineering Geology***, *354*, 108201. https://doi.org/10.1016/j.enggeo.2025.108201
8. ***Kundu, B.***, Senapati, B., Chilukoti, N., & Sahoo, S. (2025). The potential role of El Niño-Southern Oscillation in triggering Greenland glacial earthquakes. ***Acta Geophysica***, 1-11. https://doi.org/10.1007/s11600-025-01541-5
9. Ray, S., Senapati, B., ***Kundu, B.,*** & Santosh, M. (2025). Ionospheric disturbances over Ukraine through the eyes of standalone GNSS receiver. ***Journal of Atmospheric and Solar-Terrestrial Physics***, *268*, 106451. https://doi.org/10.1016/j.jastp.2025.106451
10. Ray, S., ***Kundu, B.,*** Sahoo, S., & Tiwari, D. K. (2025). Discerning double coseismic travelling ionospheric disturbances following the April 2024 Hualien earthquake, from GNSS TEC. ***Advances in Space Research***. https://doi.org/10.1016/j.asr.2025.01.005

2024

11. Ray, S., Senapati, B., ***Kundu, B.,*** & Heki, K. (2024). A Global Perspective on the Interaction between Earth's magnetic field and Ionospheric Disturbances. ***Advances in Space Research***, *74*(8), 3569-3582. https://doi.org/10.1016/j.asr.2024.06.072
12. Dalal, P., ***Kundu, B.***, Sreejith, K. M., Senapati, B., Tiwari, D. K., Vissa, N. K., Jha, B. & Jin, S. (2024). Influence of Anthropogenic Groundwater Unloading in Haouz plain on the 8 September 2023, Mw 6.8, Al Haouz, Morocco Earthquake. ***Bulletin of the Seismological Society of America.*** https://doi.org/10.1785/0120240105
13. Sahoo, S., Senapati, B., ***Kundu, B.***, Zhou, Y., Ghosh, A., & Jin, S. (2024). Tremor burst and triggering processes in Cascadia after the 2022 Hunga Tonga-Hunga Ha'apai volcanic eruption. ***Geomatics, Natural Hazards and Risk***, *15*(1), 2409279. https://doi.org/10.1080/19475705.2024.2409279
14. Sahoo, S., Senapati, B., Panda, D., Jin, S., & ***Kundu, B.*** (2024). Tidal triggering of seismic swarm associated with hydrothermal circulation at Blanco ridge transform fault zone, Northeast Pacific. ***Physics of the Earth and Planetary Interiors***, *356*, 107259. https://doi.org/10.1016/j.pepi.2024.107259
15. Ray, S., Huba, J. D., ***Kundu, B.***, & Jin, S. (2024). Influence of the October 14, 2023, ring of fire annular eclipse on the ionosphere: A comparison between GNSS observations and SAMI3 model prediction. ***Journal of Geophysical Research: Space Physics***, *129*(9), e2024JA032710. https://doi.org/10.1029/2024JA032710

16. Senapati, B., ***Kundu, B.***, Jin, S., & Santosh, M. (2024). Drought-induced seismicity modulation in the New Madrid Seismic Zone, central United States: ***Geosphere***, *20*(5), 1347-1363. https://doi.org/10.1130/GES02702.1
17. ***Kundu, B.,*** Zwaan, F., & Senapati, B. (2024). Unfolding rotational tectonics and topographic evolution from localized verses diffuse plate boundary counterparts. ***Scientific Reports,*** *14*(1), 8199. https://doi.org/10.1038/s41598-024-58921-y
18. Dalal, P., Senapati, B., & ***Kundu, B.*** (2024). Co-seismic surface displacement of the June 21, 2022 MW6 Khōst, Afghanistan earthquake from InSAR observations. ***Geodesy and Geodynamics,*** *15*(3), 201-208. https://doi.org/10.1016/j.geog.2023.08.003
19. Sahoo, S., ***Kundu, B.,*** Petrosino, S., Yadav, R.K., Tiwari, D.K., & Jin, S. (2024). Feedback responses between endogenous and exogenous processes at Campi Flegrei caldera dynamics, Italy. ***Bulletin of Volcanology.*** https://doi.org/10.1007/s00445-024-01719-7
20. Senapati, B., ***Kundu, B.,*** Jha, B., & Jin, S. (2024). Gravity-induced seismicity modulation on planetary bodies and their natural satellites. ***Scientific Reports,*** *14*(1), 2311. https://doi.org/10.1038/s41598-024-52809-7
21. Senapati, B., Lindsey, E. O., ***Kundu, B.,*** Panda, D., Tiwari, D. K., & Yadav, R. K. (2024). 'Double Puzzle'at the Shumagin seismic gap, Alaska Peninsula: intraslab strike-slip faulting loaded by lateral variations in megathrust fault friction. ***Geophysical Journal International,*** *236*(3), 1471-1483. https://doi.org/10.1093/gji/ggae002

2023

22. Senapati, B., Panda, D., & ***Kundu, B***. (2023). Solid-earth tidal modulations of 2019 Ridgecrest earthquake sequence, California: any link with Coso geothermal field? ***Journal of Seismology***, 1-15. https://doi.org/10.1007/s10950-023-10166-4
23. Tiwari, D. K., Hari, M., ***Kundu, B.,*** Jha, B., Tyagi, B., & Malik, K. (2023). Delhi urbanization footprint and its effect on the earth's subsurface state-of-stress through decadal seismicity modulation. ***Scientific Reports,*** *13*(1), 11750. https://doi.org/10.1038/s41598-023-38348-7
24. Senapati, B., ***Kundu, B***., Perfettini, H., Gahalaut, V. K., Singh, A.K., Ghosh, A. & Rao, N. P. (2023). Fault resonance process and its implications on seismicity modulation on active Fault system. ***Tectonophysics,*** *861*, 229920. https://doi.org/10.1016/j.tecto.2023.229920
25. ***Kundu, B***., Senapati, B., Bürgmann, R., & Ray, S. (2023). Detecting the January 15, 2022 Hunga Tonga volcanic eruption (SW Pacific) high up in the sky through "ionospheric resonance" ***Geophysical Journal International***. *233*(2), 922–931. https://doi.org/10.1093/gji/ggac492
26. Dalal, P., ***Kundu, B.***, Panda, J., & Jin, S. (2023). Atmospheric Lamb wave pulse and volcanic explosivity index following the 2022 Hunga Tonga (South Pacific) eruption. ***Frontiers in Earth Science***, *10*, 931545. https://doi.org/10.3389/feart.2022.931545
27. Sen, R., Panda, D., ***Kundu, B.*** & Santosh, M. (2023). Mountain height as a proxy for the cessation of active plate convergence. ***Geosystems and Geoenvironment***, *2*(4), 100189. https://doi.org/10.1016/j.geogeo.2023.100189
28. Sen, R., Panda, D., ***Kundu, B.*** & Santosh, M. (2023). Segmentation of Continental Indian Plate by the Narmada–Son diffuse plate boundary. ***Geological Journal,*** *1–14*. https://doi.org/10.1002/gj.466714

2022

29. Panda, D., ***Kundu, B.*** & Gahalaut, V. K. (2022). Two decades of progress in the understanding of the Indo-Burmese Arc plate circuit. ***Current science***, *123*, 259-260. https://www.currentscience.ac.in/Volumes/123/03/0259.pdf
30. Panda, D., Samanta, S.K., Singh, M.D., Gahalaut, V.K. & ***Kundu***, *B.* (2022). Low-effective fault strength of a blind detachment beneath Indo-Burmese Arc (NE-India) induced by frictional–viscous flow. ***Journal of Earth System Science,*** *131*, 9. https://doi.org/10.1007/s12040-021-01754-4

31. ***Kundu, B.*** (2022). Synchronous Tremor Modulation During the Passage of 2012 Super-typhoon Jelawat in Nankai Trough: By Chance or Real Consequence? ***Journal of the Geological Society of India,*** *98*, 169-172. https://doi.org/10.1007/s12594-022-1953-x
32. Panda, D. & ***Kundu, B.*** (2022). Geodynamic complexity of the Indo-Burmese Arc region and its interaction with Northeast Himalaya, ***Earth-Science Reviews***, *226*, 103959. https://doi.org/10.1016/j.earscirev.2022.103959
33. Senapati, B., ***Kundu, B.*** & Jin, S. (2022). Seismicity modulation by external stress perturbations in plate boundary vs. stable plate interior, ***Geoscience Frontiers***, *13*(3), 101352. https://doi.org/10.1016/j.gsf.2022.101352
34. ***Kundu, B.***, Panda, D., Vissa, N.K. & Tyagi, B. (2022). "Novel 2019 Coronavirus Outbreak" through the Eyes of GNSS Signal, ***Journal of the Geological Society of India,*** *98*, 83-87. https://doi.org/10.1007/s12594-022-1933-1
35. Sahoo, S., Tiwari, D.K., Panda, D. & ***Kundu, B.***, (2022). Eruption cycles of Mount Etna triggered by seasonal climatic rainfall, ***Journal of Geodynamics***, *149*, p.101896. https://doi.org/10.1016/j.jog.2021.101896

2021

36. ***Kundu, B.,*** Senapati, B., Matsushita, A. & Heki, K., 2021. Atmospheric wave energy of the 2020 August 4 explosion in Beirut, Lebanon, from ionospheric disturbances. ***Scientific Reports,*** *11*, 2793, https://doi.org/10.1038/s41598-021-82355-5.
37. Sen, R., Panda, D. & ***Kundu, B.*** (2021). Crustal deformation, long-term plate motion and earthquake occurrence process of the Shan Plateau region, Northern Sunda Arc: constraints from geodetic measurements. ***Earth Science Frontiers***. https://doi.org/10.13745/j.esf.sf.2021.9.10
38. Sahoo, S., Senapati, B., Panda, D., Tiwari, D.K., Santosh, M. & ***Kundu, B.*** (2021). Tidal triggering of micro-seismicity associated with caldera dynamics in the Juan de Fuca ridge. ***Journal of Volcanology and Geothermal Research,*** *417*, 107319. https://doi.org/10.1016/j.jvolgeores.2021.107319
39. Tiwari, D. K., Jha, B., ***Kundu, B.,*** Gahalaut, V. K. & Vissa, N. K. (2021). Groundwater extraction-induced seismicity around Delhi region, India. ***Scientific Reports,*** *11*, 10097, https://doi.org/10.1038/s41598-021-89527-3

2020

40. ***Kundu, B.,*** Yadav, R.K., Bürgmann, R., Wang, K., Panda, D. & Gahalaut, V.K., 2020. Triggering relationship between magmatic and faulting processes in the May 2018 eruptive sequence at Kilauea volcano, Hawaii. ***Geophysical Journal International***, *222*(1), 461-473. https://doi.org/10.1093/gji/ggaa178
41. ***Kundu, B.,*** Yadav, R.K., Gahalaut, V.K. & Panda, D. (2020). The January 23, 2018 M7. 9 Kodiak earthquake, Alaska: A consequence of slip partitioning in the outer rise region, ***Journal of Geodynamics***, *137*, 101732, https://doi.org/10.1016/j.jog.2020.101732
42. Panda, D., ***Kundu, B.,*** Gahalaut, V.K. & Rangin, C. (2020). India-Sunda Plate Motion, Crustal Deformation, and Seismic Hazard in the Indo-Burmese Arc, ***Tectonics,*** *39*(8), e2019TC006034. https://doi.org/10.1029/2019TC006034
43. Senapati, B., Huba, J., ***Kundu, B.,*** Gahalaut, V.K., Panda, D., Mondal, S. & Catherine, J. K. (2020). Change in total electron content during the December 26, 2019 solar eclipse: constraints from GNSS observations and comparison with SAMI3 model results, ***Journal of Geophysical Research-Space Physics,*** *125*(10), e2020JA028230. https://doi.org/10.1029/2020JA028230
44. Panda, D., ***Kundu, B.,*** Gahalaut, V.K., Bürgmann, R., Jha, B., Asaithambi, R., Yadav, R.K., Vissa, N. K. & Bansal, A. K. (2020). Reply to "A warning against over-interpretation of seasonal signals measured by the Global Navigation Satellite Systems". ***Nature Communications***, *11*(1),1376. https://doi.org/10.1038/s41467-018-06371-2

2019

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b) Non-SCI Papers/Book Chapters (5)

86. Ray, S. & ***Kundu, B.*** (2026) "Talking Faults", A study of the 2023 Kahramanmaraş (Turkey) Earthquake Doublet. In Mukherjee, S., Chakravarty, S. & Samanta, S.K. (Eds.), On *Models in Structural Geology and Tectonics*. ***Springer Nature***. (accepted)
87. Sahoo, S., Subhadarshini S., Jena, A. K. & ***Kundu B.*** (2026). Structural form of stratovolcanoes on planetary bodies: A theoretical perspective and model validation. ***Structural Geology and Tectonics*** Springer https://doi.org/1010079789819547432
88. ***Kundu, B.,*** Senapati, B. & Tyagi, B. (2023). A Solar Eclipse: Excitement Is in the Air. ***Front. Young Minds***. 11:937851. https://doi.org/10.3389/frym.2023.937851
89. Senapati, B., Panda, D**.,** ***Kundu, B.*** & Tyagi, B. (2022). Real-Time Detection of Tornado-Induced Ionospheric Disturbances by Stand-Alone GNSS Receiver. In: Unnikrishnan, A., Tangang, F., Durrheim, R.J. (eds) ***Extreme Natural Events. Springer, Singapore***. 199-220. (Book chapter) https://doi.org/10.1007/978-981-19-2511-5_8
90. Panda, D., ***Kundu, B.*** & Gahalaut, V.K., (2020). Earthquakes in the Himalaya, H.K. Gupta (ed.), Encyclopedia of Solid Earth Geophysics, ***Encyclopedia of Earth Sciences Series***, https://doi.org/10.1007/978-3-030-10475-7_263-1
91. ***Kundu, B.*** (2014). The topology of Slab-pull force in relation to slab window process in subduction zones: A global perspective, (invited Review Article), ***International Journal of Earth and Atmospheric Science***, Vol-1, 1-10.
92. Catherine, J.K., Gahalaut, V.K., Jade, S., Ambikapathy, A., Narsaia, M., Gireesh, R., Bansal, A., Kishore, L.P., Mahesh, P., Nagraju, K., ***Kundu, B.,*** Chadha, R.K., & Gupta., D.C. (2009). Co-Seismic and Post-Seismic Displacement of 2004 Sumatra-Andaman Earthquakes. ***Earth System Sciences***, Vol-I.

c) Publications Under Review/Submitted

- Senapati, B., ***Kundu, B.***, Bürgmann, R., Panda, D. and Yadav, R.K. (2023). Seasonal modulation of microseismicity, low frequency earthquakes and anomalous geodetic transient slip in the central Alpine Fault, New Zealand. ***Earth and Planetary Science Letters*** (communicated).
- ***Kundu, B.,*** Bürgmann, R., Xue, L., Panda, D., & Sahoo, S. (2024). Diurnal modulation of micro-seismicity in the New Madrid seismic zone: natural or artifact? ***Seismica*** (under review)
- ***Kundu, B.,*** Dixon, J., Tiwari, D.K., and Sahoo, S. (2024). Can an earthquake belt out a tune like a loudspeaker at a rock concert? ***Frontiers for Young Minds***. (under review)
- Sahoo, S., Dalal, P. and ***Kundu, B.*** (2025). Movement of Magma during the July 10 2023 Fagradalsfjall Eruption, Iceland: Tracking through surface displacement and seismicity migration using Stress Transfer Analysis. Journal of Earth Systems, Resources and Sustainability Science. (under review)
- Ray, S., Dalal, P., Panda, D. and ***Kundu, B.***, Mukherjee, S., Jin, S. The Bend in the Break: How Fault Curvature Shapes Earthquakes. ***Natural Hazards*** (submitted).
- ***Kundu, B.***, Inbal, A., Ray, S., Dalal, P., & Das, S. A Seismo-Geodetic-Environmental Analysis of the Mw 3.4 December 15, 2024, Explosion in Tartus, Syria. ***Seismological Research letters.*** (resubmitted)
- Dalal P., Ahsan, A., Das, S. K., Hari, M., Panda, D. & ***Kundu, B.*** (2026). Anthropogenic-Hydrological Control on the 21st November 2025 Mw 5.4 Tungi Dhaka Earthquake. ***Tectonophysics*** (under Review)

- Dalal, P., Sahoo, S., Hari, M., Panda, D., ***Kundu, B.,*** & Tiwari, V. M. (2026). Geodetic insights into water-driven poro-elastic response, aquifer flow and land deformation dynamics in Delhi NCR, India. Journal of Hydrology (revision submitted)
- ***Kundu, B.*** Geology of Conflict – How middle East Crisis is reshaping Earth's new "technofossils"? ***Anthropocene*** (under revision).
- ***Kundu, B.*** Himalayan Tectonics & Earthquake Resilience: A bold path forward for ethical geosciences community. In *Seismo-tectonics and Seismic Hazards in the Himalaya: Advances and perspectives*. **Elsevier.** (under review)
- ***Kundu, B.*** "Beyond the Leaky Pipeline" – Deconstructing the Toxic Obstacles in Geosciences for a Just Professional Future. ***Journal of Geoethics and Social Geosciences*** (under review)
- Dalal, P, Xu,Y., Burgmann, R. & ***Kundu, B.*** (2025). Forensic Remote Sensing Monitoring of 22nd June 2025 Strike-Induced Surface Disturbances at the Fordow Nuclear Facility, Iran. Remote Sensing of Environment (Submitted)

CONFERENCE PROCEEDINGS

1. Panda, D., ***Kundu, B.,*** Gahalaut, V.K., Bürgmann, R., Jha, B., Asaithambi, R., Yadav, R.K., Vissa, N.K., Bansal, A.K. (2018, December). Seasonal Modulation of Deep Slow-slip and Earthquakes on the Main Himalayan Thrust. In *AGU Fall Meeting Abstracts* (Vol. 2018) Washington, D.C., USA.
2. Panda, D. & ***Kundu, B.*** Crustal deformation, earthquake occurrence process and along strike segmentation of Sagaing Fault, Myanmar, National Seminar on Dynamics of Surface and Subsurface Geological Processes, 2018, Department of Earth Sciences, Pondicherry University.
3. Panda, D. & ***Kundu, B.*** Oblique convergence, strain partitioning and associated geodynamic complexities in NW and NE Himalaya, International Conference on Climate change and extreme events of Himalayas, 2019, IIT Mandi, Himachal Pradesh.
4. Senapati, B., Panda, D. & ***Kundu, B.,*** Hydrological load induced seasonal deformation and earthquake modulation along the Main Himalayan Thrust. International Conference on Climate change and extreme events of Himalayas, 2019, IIT Mandi, Himachal Pradesh.
5. Senapati, B., ***Kundu, B.,*** & Singh, A. K. (2019, December). Fault resonance process and its implication on active fault system. In *AGU Fall Meeting Abstracts* (Vol. 2019, pp. G53B-0623).
6. Atmospheric wave energy of the 2020 August 4 explosion in Beirut, Lebanon, from ionospheric disturbances, by ***Bhaskar Kundu*** et al., EGU21-1936.
7. ***Kundu, B.***, Senapati, B., Matsushita, A., Heki, K. (2021). Atmospheric wave energy of the 2020 August 4 explosion in Beirut, Lebanon, from ionospheric disturbances. NSF Convergence Workshop, 2021.
8. Senapati, B., ***Kundu, B.*** & Jin, S. (2022, December). Gravity-induced seismicity modulation on planetary bodies and their natural satellites. In *AGU Fall Meeting Abstracts* (Vol. 2022, pp. S22C-0181).
9. Sahoo, S., Senapati, B., Panda, D., Jin, S., ***Kundu, B.*** (2022, December). Tidal Triggering of Seismic Swarm Associated with Hydrothermal Circulation at Blanco Ridge Transform Fault Zone in Northeast Pacific. In *AGU Fall Meeting Abstracts* (Vol. 2022, pp. T12C-0109).
10. Panda, D., Lindsey, E. O., Senapati, B., & ***Kundu, B.*** (2022, December). Interseismic shear stress caused by variable kinematic coupling along the megathrust plate interface. In *AGU Fall Meeting Abstracts* (Vol. 2022, pp. G35B-0324).
11. Sahoo, S., ***Kundu, B.*** & Petrosino, S. (2023, December). Exogenous forces on unrest volcanic systems Seasonal and Tidal modulations of tremors at Campi Flegrei caldera, Italy. In *AGU Fall Meeting Abstracts* (Vol. 2023) San Francisco, USA.
12. Tiwari, D.K., Hari, M., ***Kundu, B.,*** Jha, B., Tyagi, B. & Vissa, N.K. (2023, December). Delhi urbanization footprint and its effect on the earth's subsurface state-of-stress through decadal seismicity modulation. In *AGU Fall Meeting Abstracts* (Vol. 2023, pp. S516-0276)

13. Dalal, P., ***Kundu, B.,*** Sreejith, K. M., Senapati, B., Tiwari, D.K., Vissa, N. K., Jha, B. & Jin, S. (2024, December). Influence of anthropogenic groundwater unloading in Haouz plain on the 8 September 2023, Mw 6.8, Al Haouz, Morocco Earthquake. In *AGU Fall Meeting Abstracts* (Vol. 2024), Washington, D.C., USA.
14. Ray, S., Ghosh, A., ***Kundu, B.*** & Senapati, B. (2025). Effects of Plate Interface Roughness and Frictional Heterogeneities on Earthquake Cycle Dynamics in Subduction Zones. In *AGU Fall Meeting Abstracts* (Vol. 2025), New Orleans, Louisiana, USA.
15. Dalal, P., Hari, M., & ***Kundu, B.*** (2026). Seasonal and Anthropogenic Controls on Slow-moving Landslides: A Case Study of Uttarakhand Himalaya, India (No. EGU26-3256). Copernicus Meetings.

IMPACT OF SCIENTIFIC CONTRIBUTIONS

In the News

- Eos Science News by AGU, Movement of the Joshimath Landslide in India *2025*
- The Hindu, India's water, energy demand spotlight risk of human-induced quakes *2025*
- Nature India, Frequent earthquakes around Delhi linked to groundwater pumping *2021*
- The Times of India, Groundwater role in Delhi tremors? *2021*
- UNAVCO, Tracking Interactions of the Sun, the Moon and Earth with GNSS for the 2017 Great American Solar Eclipse *2019*
- Newsd, Himalayan quakes: Water-loading plays a role, say geophysicist *2018*
- Nature, Risk of human-triggered earthquakes laid out in biggest-ever database *2017*
- Nature India, Groundwater exploitation link to Nepal quake *2016*
- The Hindu, Major earthquake lurking under India, Bangladesh: study *2016*

SUPERVISION/TRAINING/TEACHING

- **Supervision/Guidance to Ph.D. Students/Postdoc.**:

Research Group members (https://www.tectonicgeodesylab.in/)

PhD	*Joined*
Deepankar Deoli *(PhD)*	*2026*
Ankita Sahoo (PhD)	*2026*
Masud Rana (PhD, co-supervised)	*2022*
Prohelika Dalal (PhD)	*2021*
Sayak Ray (PhD)	*2021*
Dr. Deepak Kumar Tiwari	*2019*
Dr. Sambit Sahoo	*2019*
Dr. Batakrushna Senapati	*2017*
Dr. Dibyashakti Panda	*2016*

Tectonic Geodesy Laboratory

Post Doc	
Dr. Abhishek Kundu	*2024*
Dr. Dibyashakti Panda (Co PI)	*2024*
Dr. Sambit Sahoo	*2025*
Dr. Sareer Ahmed Mir (Co PI)	*2024*

Alumni	*Till*
Dr. Abhishek Kundu (Post-Doctoral researcher at IIT Bombay)	*2025*
Dr. Batakrushna Senapati (*Post-Doctoral Researcher at National Central*	

University, Taiwan) *2024*
Dr. Dibyashakti Panda (Assistant Professor at Central University of Tamil Nadu, India) 2025

- **Training**: Imparted training & mentored **67** Dissertations of **Masters/PG/M.Tech** students to date.
- **Teaching Experiences:**

  Theory: Physical Geology (ER511); Crystallography and Mineralogy (ER512); Structural Geology (ER513); Igneous and Metamorphic Petrology (ER515); Earth System Science (ER5201); Geophysical Methods (ER526); Tectonic Geodesy: Crustal Deformation and Active Tectonics (ER529); Exploration Geophysics (ER5342); Sedimentary Petrology (ER5301)

  Practical: Structural Geology Laboratory (ER514); Igneous and Metamorphic Petrology Laboratory (ER574); Coal Geology Laboratory (ER582); Field Work (ER5880).

CONTRIBUTION TOWARDS SOCIETY

Books

1. Monami, & ***Bhaskar***. (2025). Earth Sciences—Our Grounded Love. ***Writer's Pocket***. **ISBN**: 978-9368688907. https://www.amazon.in/Poetry-book-Earth-Sciences-Grounded/dp/9368688907/
2. ***Bhaskar***, & Monami. (2025). The Earth Remembers Everything—Rewriting Our Story. ***Writer's Pocket***. **ISBN**: 978-9368684657. https://www.amazon.in/dp/9368684650/
3. ***Bhaskar***, & Monami. (2026). The Mysteries of Earth and Beyond. ***Evincepub Publishing***.

Articles

1. ***Kundu, B.*** Geology of Conflict – How middle East Crisis is reshaping Earth's new "technofossils"? ***Anthropocene*** (under minor revision).
2. ***Kundu, B.*** Himalayan Tectonics & Earthquake Resilience: A bold path forward for ethical geosciences community. In *Seismo-tectonics and Seismic Hazards in the Himalaya: Advances and perspectives*. ***Elsevier***. (under review)
3. ***Kundu, B.*** "Beyond the Leaky Pipeline" – Deconstructing the Toxic Obstacles in Geosciences for a Just Professional Future. ***Journal of Geoethics and Social Geosciences*** (under review)