



CURRICULUM VITAE

BHASKAR KUNDU

Associate Professor

Former HOD (2018-2021), NIT Rourkela

Mailing Address:

Department of Earth and Atmospheric Sciences

National Institute of Technology, Rourkela

Sector 1, Rourkela, Odisha – 769008

Telephone: (+91) 6612462936 (office)

E-mail: kundub@nitrrkl.ac.in; rilbhaskar@gmail.com

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

<i>Ph.D., Geophysics (Tectonic Geodesy)</i> CSIR – National Geophysical Research Institute & Osmania University, Hyderabad	2013
<i>M.Sc., Applied Geology (University Gold medalist with 82.4%)</i> Department of Geological Sciences, Jadavpur University, Kolkata	2007
<i>B.Sc., Geology (Honours with 78.6%)</i> Department of Geological Sciences, Jadavpur University, Kolkata	2005

EMPLOYMENT

<i>Associate Professor</i> Department of Earth and Atmospheric Sciences, National Institute of Technology Rourkela	2024 – till date
<i>Assistant Professor Grade – I</i> Department of Earth and Atmospheric Sciences, National Institute of Technology Rourkela	2020 – 2024
<i>Assistant Professor Grade – II</i> Department of Earth and Atmospheric Sciences, National Institute of Technology Rourkela	2014 – 2020
<i>Project Scientist</i> CSIR-National Geophysical Research Institute, Hyderabad	2013 – 2014

AWARDS/HONOURS:

• 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

- 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-present
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 and Dr. Vikas Kumar Das**, NIT Rourkela. (**40 lakhs INR**, *funding to be sanctioned from 2025*)

PROFESSIONAL SERVICES

- **Reviewed papers** published in national and international journals (*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, Gandhinagar)
Arun K. Singh	(Department of Mechanical Engineering, VNIT, Nagpur)
Sreejith K. M.	(Space Applications Center, ISRO)

International

Affiliations

Denis Legrand	(Instituto de Geofísica, 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)
Yuanxun 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 – 80)

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) – 7	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) – 1	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		



Bhaskar Kundu

Department of Earth & Atmospheric Sciences, NIT Rourkela

Verified email at nitrrkl.ac.in - [Homepage](#)

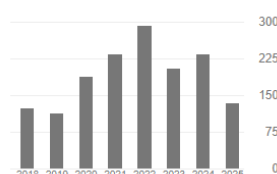
Tectonic Geodesy Seismology

FOLLOW

Cited by

VIEW ALL

	All	Since 2020
Citations	1903	1287
h-index	23	19
i10-index	39	36



TITLE	CITED BY	YEAR
Role of plate convergence rate in shaping earthquake recurrence in subduction zones S Ray, B Kundu, B Senapati, A Ghosh, AK Singh Scientific Reports 15 (1), 21227		2025
Deformation dynamics and hazard of slow-moving landslides: The 2023 Joshimath event, Uttarakhand Himalaya P Dalal, M Hari, Y Xu, B Senapati, P Gautam, DK Tiwari, R Bürgmann, ... Engineering Geology, 108201		2025

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

(a) SCI Papers (80)

2025

1. 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>
2. 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>
3. **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>

4. 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>
5. 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

6. 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>
7. 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>
8. 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>
9. 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>
10. 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>
11. 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>
12. **Kundu, B.**, Zwaan, F., & Senapati, B. (2024). Unfolding rotational tectonics and topographic evolution from localized versus diffuse plate boundary counterparts. *Scientific Reports*, 14(1), 8199. <https://doi.org/10.1038/s41598-024-58921-y>
13. 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>
14. 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>
15. 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>
16. 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

17. 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>

18. 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>
19. 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>
20. **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>
21. 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>
22. 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>
23. 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

24. 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>
25. 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>
26. **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>
27. 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>
28. 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>
29. **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>
30. 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

31. **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>.
32. 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>

33. 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>
34. 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

35. **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>
36. **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>
37. 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>
38. 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>
39. 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

40. **Kundu, B.**, Senapati, B. & Santosh, M. (2019). Surface gravity and crater diameter as proxies of extra-terrestrial impact. *Icarus*, 331, 62-68. <https://doi.org/10.1016/j.icarus.2019.05.005>
41. Panda, D., Mondal, A. & **Kundu, B.** (2019). Eastward “glacier-like flow” of the Tibetan crust constrained from power-law rheology. *Journal of Asian Earth Sciences*, 177, 129-133. <https://doi.org/10.1016/j.jseaes.2019.03.021>
42. **Kundu, B.**, Vissa, N.K., Gahalaut, V.K., Panda, D. & Malik, K. (2019). Influence of anthropogenic groundwater pumping on the 2017 November 12 M 7.3 Iran–Iraq border earthquake. *Geophysical Journal International*, 218(2), 833-839. <https://doi.org/10.1093/gji/ggz195>
43. Panda, D., Senapati, B., Tyagi, B. & **Kundu, B.** (2019). Effects of Rayleigh-Taylor instability and ionospheric plasma bubbles on the global navigation satellite System signal. *Journal of Asian Earth Sciences*, 170, 225-233. <https://doi.org/10.1016/j.jseaes.2018.11.006>

2018

44. Panda, D., **Kundu, B.**, Gahalaut, V.K., Bürgmann, R., Jha, B., Asaithambi, R., Yadav, R.K., Vissa, N.K. & Bansal, A.K. (2018). Seasonal modulation of deep slow-slip and earthquakes on the Main Himalayan Thrust. *Nature Communications*, 9(1),4140.<https://doi.org/10.1038/s41467-018-06371-2>
45. **Kundu, B.**, Panda, D., Gahalaut, V.K. and Catherine, J. K. (2018). The 2017 August 21 American total solar eclipse through the eyes of GPS. *Geophysical Journal International*, 214(1), 651-655. <https://doi.org/10.1093/gji/ggy149>

46. Yadav, R.K., **Kundu, B.**, Gahalaut, K. & Gahalaut, V.K. (2018). The 12 May 2015 Kodari earthquake (Mw 7.3) in Central Nepal: delayed triggering by the 25 April 2015 Gorkha earthquake (Mw 7.8). *Current Science*, 114(7), 1534-1539. <https://doi.org/10.18520/cs/v114/i07/1534-1539>
47. Panda, D., **Kundu, B.**, Gahalaut, V.K. & Rangin, C. (2018). Crustal deformation, spatial distribution of earthquakes and along-strike segmentation of the Sagaing Fault, Myanmar. *Journal of Asian Earth Sciences*, 166, 89-94. <https://doi.org/10.1016/j.jseaes.2018.07.029>
48. Pal, D., **Kundu, B.** & Santosh, M. (2018). Topography as a proxy for inter-plate coupling. *Journal of Geodynamics*, 121, 133-142. <https://doi.org/10.1016/j.jog.2018.09.007>
49. **Kundu, B.**, Panda, D. & Gahalaut, V. K. (2018). Non-tectonic signals in tectonic geodesy. *Current Science*, 115, 822-825. <https://doi.org/10.18520/cs/v115/i5/822-825>
50. Panda, D., **Kundu, B.** & Santosh, M. (2018). Oblique convergence and strain partitioning in the outer deformation front of NE Himalaya. *Scientific Reports*, 8(1), 10564. <https://doi.org/10.1038/s41598-018-28774-3>

2017

51. **Kundu, B.**, Vissa, N.K., Panda, D., Jha, B., Asaithambi, R., Tyagi, B. & Mukherjee, S. (2017). Influence of a meteorological cycle in mid-crustal seismicity of the Nepal Himalaya. *Journal of Asian Earth Sciences*, 146, 317-325. <https://doi.org/10.1016/j.jseaes.2017.06.003>
52. Gahalaut, K., Hassoup, A., Hamed, H., **Kundu, B.** & Gahalaut, V. (2017). Long-term and annual influence of Aswan Reservoir (Egypt) on the local seismicity: a spatio-temporal statistical analysis. *Pure and Applied Geophysics*, 174(1), 133-150. <https://doi.org/10.1007/s00024-016-1397-6>
53. Yadav, R.K., Roy, P.N.S., Gupta, S.K., Khan, P.K., Catherine, J.K., Prajapati, S.K., Kumar, A., Puviarasan, N., Bhu, H., Devachandra, M., Malik, J., **Kundu, B.**, Debbarma, C. & Gahalaut, V.K. (2017). Rupture model of Mw 7.8 2015 Gorkha, Nepal earthquake: Constraints from GPS measurements of coseismic offsets. *Journal of Asian Earth Sciences*, 133, 56-61. <https://doi.org/10.1016/j.jseaes.2016.04.015>

2016

54. **Kundu, B.**, Ghosh, A., Mendoza, M., Bürgmann, R., Gahalaut, V.K. & Saikia, D. (2016). Tectonic tremor on Vancouver Island, Cascadia, modulated by the body and surface waves of the Mw 8.6 and 8.2, 2012 East Indian Ocean earthquakes. *Geophysical Research Letters*, 43(17), 9009-9017. <https://doi.org/10.1002/2016GL069755>
55. Gahalaut, V.K. & **Kundu, B.**, 2016. The 4 January 2016 Manipur earthquake in the Indo-Burmese wedge, an intra-slab event. *Geomatics, Natural Hazards and Risk*, 7(5), 1506-1512. <https://doi.org/10.1080/19475705.2016.1179686>
56. Yadav, R.K., Nankali, H., **Kundu, B.**, Patel, P. & Gahalaut, V.K., 2016. Finite fault slip models for the 11 August 2012 Varzaghan-Ahar, NW Iran earthquakes (Mw 6.4 and 6.3) from near-field GPS measurements of coseismic offsets. *Journal of Asian Earth Sciences*, 115, 268-272. <https://doi.org/10.1016/j.jseaes.2015.10.015>

2015

57. Tiwari, R.P., Gahalaut, V.K., Rao, C.U., Lalsawta, C. & **Kundu, B.** (2015). No evidence for shallow shear motion on the Mat Fault, a prominent strike slip fault in the Indo-Burmese wedge. *Journal of Earth System Science*, 124(5), 1039-1046. <https://doi.org/10.1007/s12040-015-0591-8>
58. **Kundu, B.**, Vissa, N.K. & Gahalaut, V.K., 2015. Influence of anthropogenic groundwater unloading in Indo-Gangetic plains on the 25 April 2015 Mw 7.8 Gorkha, Nepal earthquake. *Geophysical Research Letters*, 42(24), 10-607. <https://doi.org/10.1002/2015GL066616>
59. Catherine, J.K., Gahalaut, V.K., **Kundu, B.**, Ambikapathy, A., Yadav, R.K., Bansal, A., Narsaiah, M. & Naidu, S.M. (2015). Low deformation rate in the Koyna–Warna region, a reservoir triggered earthquake site in west-central stable India. *Journal of Asian Earth Sciences*, 97, 1-9. <https://doi.org/10.1016/j.jseaes.2014.10.013>

2014

60. **Kundu, B.**, Yadav, R.K., Bali, B.S., Chowdhury, S. and Gahalaut, V.K. (2014). Oblique convergence and slip partitioning in the NW Himalaya: Implications from GPS measurements. *Tectonics*, 33(10), 2013-2024. <https://doi.org/10.1002/2014TC003633>
61. **Kundu, B.**, Nankali, H., Malik, P., Yadav, R.K. and Gahalaut, V.K. (2014). Coseismic Offsets due to Intermediate Depth 16 April 2013 Southeast Iran Earthquake (Mw 7.8). *Bulletin of the Seismological Society of America*, 104(3), 1562-1566. <https://doi.org/10.1785/0120130269>
62. Devachandra, M., **Kundu, B.**, Catherine, J., Kumar, A. & Gahalaut, V.K. (2014). Global positioning system (GPS) measurements of crustal deformation across the frontal eastern Himalayan syntaxis and seismic-hazard assessment. *Bulletin of the Seismological Society of America*, 104(3), 1518-1524. <https://doi.org/10.1785/0120130290>
63. Khandelwal, D.D., Gahalaut, V., Kumar, N., **Kundu, B.** & Yadav, R.K. (2014). Seasonal variation in the deformation rate in NW Himalayan region. *Natural hazards*, 74(3), 1853-1861. <https://doi.org/10.1007/s11069-014-1269-2>

2013

64. Yadav, R.K., **Kundu, B.**, Gahalaut, K., Catherine, J., Gahalaut, V.K., Ambikapathy, A. & Naidu, M.S. (2013). Coseismic offsets due to the 11 April 2012 Indian Ocean earthquakes (Mw 8.6 and 8.2) derived from GPS measurements. *Geophysical Research Letters*, 40(13), 3389-3393. <https://doi.org/10.1002/grl.50601>
65. **Kundu, B.** & Gahalaut, V.K. (2013). Tectonic Geodesy revealing geodynamic complexity of Indo-Burmese Arc region, NE-India. *Current Science*, 104(7), 920-933.
66. Gahalaut, V.K., **Kundu, B.**, Laishram, S.S., Catherine, J., Kumar, A., Singh, M.D., Tiwari, R.P., Chadha, R.K., Samanta, S.K., Ambikapathy, A. & Mahesh, P. (2013). Aseismic plate boundary in the Indo-Burmese wedge, northwest Sunda Arc. *Geology*, 41(2), 235-238. <https://doi.org/10.1130/G33771.1>

2012

67. Mahesh, P., Gahalaut, V.K., Catherine, J.K., Ambikapathy, A., **Kundu, B.**, Bansal, A., Chadha, R.K. and Narsaiah, M. (2012). Localized crustal deformation in the Godavari failed rift, India. *Earth and Planetary Science Letters*, 333, 46-51. <https://doi.org/10.1016/j.epsl.2012.04.008>
68. Mahesh, P., Catherine, J.K., Gahalaut, V.K., **Kundu, B.**, Ambikapathy, A., Bansal, A., Premkishore, L., Narsaiah, M., Ghavri, S., Chadha, R.K. & Choudhary, P. (2012). Rigid Indian plate: constraints from GPS measurements. *Gondwana Research*, 22(3-4), 1068-1072. <https://doi.org/10.1016/j.gr.2012.01.011>
69. **Kundu, B.**, Gahalaut, V.K. & Catherine, J.K. (2012). Seamount subduction and rupture characteristics of the March 11, 2011, Tohoku earthquake. *Journal of the Geological Society of India*, 79(3), 245-251. <https://doi.org/10.1007/s12594-012-0047-6>
70. **Kundu, B.**, Legrand, D., Gahalaut, K., Gahalaut, V.K., Mahesh, P., Kamesh Raju, K.A., Catherine, J.K., Ambikapathy, A. & Chadha, R.K. (2012). The 2005 volcano-tectonic earthquake swarm in the Andaman Sea: Triggered by the 2004 great Sumatra-Andaman earthquake. *Tectonics*, 31(5). <https://doi.org/10.1029/2012TC003138>
71. Gahalaut, V.K. & **Kundu, B.** (2012). Possible influence of subducting ridges on the Himalayan arc and on the ruptures of great and major Himalayan earthquakes. *Gondwana Research*, 21(4), 1080-1088. <https://doi.org/10.1016/j.gr.2011.07.021>
72. **Kundu, B.** & Gahalaut, V.K. (2012). Earthquake occurrence process in the Indo-Burmese arc and Sagaing fault region, NE-India, *Tectonophysics*, 524, 135-146. <https://doi.org/10.1016/j.tecto.2011.12.031>

2011

73. **Kundu, B.** & Santosh, M. (2011). Dynamics of post-slab breakoff in convergent plate margins: a “jellyfish” model. *American Journal of Science*, 311(8), 701-717. <https://doi.org/10.2475/08.2011.03>
74. Mahesh, P., Bansal, A., **Kundu, B.**, Catherine, J.K. & Gahalaut, V.K. (2011). Mechanism of M7.5 2009 Coco earthquake, northern Andaman region, *Journal of Geological Society of India*, 77, 243-251. <https://doi.org/10.1007/s12594-011-0031-6>
75. Gahalaut, V.K., Rajput, S. & **Kundu, B.** (2011). Low seismicity in the Bhutan Himalaya and the stress shadow of the 1897 Shillong Plateau earthquake. *Physics of the Earth and Planetary Interiors*, 186(3-4), pp.97-102. <https://doi.org/10.1016/j.pepi.2011.04.009>
76. Mahesh, P., **Kundu, B.**, Catherine, J.K. & Gahalaut, V.K. (2011). Anatomy of the 2009 Fiordland earthquake (Mw 7.8), South Island, New Zealand. *Geoscience Frontiers*, 2(1), 17-22. <https://doi.org/10.1016/j.gsf.2010.12.002>
77. **Kundu, B.** & Gahalaut, V.K. (2011). Slab detachment of subducted Indo-Australian plate beneath Sunda arc, Indonesia. *Journal of Earth System Science*, 120(2), 193-204. <https://doi.org/10.1007/s12040-011-0056-7>

2010

78. **Kundu, B.** & Gahalaut, V.K. (2010). An investigation into the seismic potential of the Irrawaddy region, northern Sunda Arc. *Bulletin of the Seismological Society of America*, 100(2), 891-895. <https://doi.org/10.1785/0120090081>
79. Gahalaut, V.K., Subrahmanyam, C., **Kundu, B.**, Catherine, J.K. & Ambikapathy, A. (2010). Slow rupture in Andaman during 2004 Sumatra–Andaman earthquake: a probable consequence of subduction of 90° E ridge. *Geophysical Journal International*, 180(3), 1181-1186. <https://doi.org/10.1111/j.1365-246X.2009.04449.x>

2009

80. Catherine, J.K., Gahalaut, V.K., Ambikapathy, A., **Kundu, B.**, Subrahmanyam, C., Jade, S., Bansal, A., Chadha, R.K., Narsaiah, M., Premkishore, L. & Gupta, D.C. (2009). 2008 Little Andaman aftershock: Genetic linkages with the subducting 90° E ridge and 2004 Sumatra–Andaman earthquake. *Tectonophysics*, 479(3-4), 271-276. <https://doi.org/10.1016/j.tecto.2009.08.017>

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

81. Sahoo, S., Subhadarshini, S., Jena, A. K. & **Kundu, B.** (2024) Structural form of stratovolcanoes on planetary bodies A theoretical perspective and model validation. *Structural Geology and Tectonics* Springer
82. **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>
83. 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
84. 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
85. **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.

86. 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 microseismicity 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)

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.

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/>)

Current

Sambit Sahoo (PhD)

Deepak Kumar Tiwari (PhD)

Proheliika Dalal (PhD)

Sayak Ray (PhD)

Masud Rana (PhD, co-supervisor)

Dr. Abhishek Kundu (Postdoc.)

Dr. Dibyashakti Panda (Postdoc.)



Tectonic Geodesy
Laboratory

Joined

2019

2019

2021

2021

2022

2024

2024

Alumni

Till

Sambit Sahoo (PhD submitted)

2025

Batakrushna Senapati (PhD) (Applied for Humboldt fellowship for Postdoc.)

2024

Dibyashakti Panda (PhD) (Fulbright Postdoctoral Researcher, from University of New Mexico, USA; Currently Principal Project Associate under National Remote Sensing Centre, NRSC)

2021

- **Training:** Imparted training & mentored **60** 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)