



CURRICULUM VITAE

BHASKAR KUNDU

Associate Professor

Former HOD (2018-2021), NIT Rourkela

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Outreach: [Tectonic Geodesy Lab](#), [YouTube](#), [Google Scholar](#)



RESEARCH INTERESTS

My research mainly focuses on the lithospheric deformation, Earthquake occurrence processes, Great earthquake cycles, Earthquake interaction and triggering process, Non Volcanic Tremors and Slow-slip events, Plate boundary vs Plate interior deformation process, Earthquake – Volcano interaction and vice-versa, Tectonics and climatic interactions process, Human-induced deformation and Lithosphere-Ionosphere coupling processes. I use field observations, seismological and geodetic measurements, remote sensing to develop kinematic and dynamic models in order to better understand these complex systems, to conduct fundamental research on “Tectonic Geodesy” and various natural hazards e.g., earthquakes, volcanic eruptions, tsunami and climate change towards a safer and more sustainable society.

Currently working projects:

- Seismicity 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 role of rate-and-state friction dynamics using Laboratory based scaled experiments.
- Co-seismic Ionospheric disturbance (CID) and its quantification.
- Climate and human-induced non-tectonic seismicity modulation studies.
- Effect of exogenous forces on volcanic deformation and associated seismicity modulation.

EDUCATIONAL QUALIFICATIONS

Ph.D., Geophysics (Geodesy)

CSIR – National Geophysical Research Institute & Osmania University, Hyderabad

2013

M.Sc., Applied Geology (University Gold medalist with 82.4%)

Department of Geological Sciences, Jadavpur University, Kolkata

2007

B.Sc., Geology (Honours)

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:

• Young Researcher award , Geosciences, from the Ministry of Earth Sciences, Govt. of India	2022
• Elected as Life Fellow of the Indian Social Science Academy (ISSA)	2022
• Research Excellence Award for outstanding researcher by NIT Rourkela, Alumni Association	2019
• Outstanding contribution in Reviewing (by Journal of Asian Earth Sciences)	2017
• ISES Order of Merit Award for outstanding works in Earthquake sciences (Young Scientist)	2015
• GATE qualified (all India rank 14)	2017
• 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

• Delivered a talk as a 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 Scientific Research	2015
• Conference talk organized by the Department of Earth Sciences at IIT Gandhinagar	2015
• Participated in Scientific discussion on “The tectonics of Indo-Burmese Arc region, NE-India”, at Mizoram and Manipur University.	2014
• Invited Talk organized by Geoscience Unit at IISC Bangalore	2014
• Conference talk at Department of Earth Sciences, IIT Kanpur	2013

EXTERNAL RESEARCH FUND RECEIVED & PROJECT HANDLED

1. Crustal deformation study across Narmada-Son Failed rift zone, Central India (*funded by MoES*), **PI: Bhaskar Kundu**, NIT Rourkela (**84 lakhs INR**) 2018-present
2. Understanding the great earthquake cycle and role of rate-and-state friction dynamics using Laboratory based scaled experiments; **PI: Bhaskar Kundu**, NIT Rourkela (**34 lakhs INR**) 2019-present

PROFESSIONAL SERVICES

- **Reviewed papers** published in national and international journals (*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**
- **External subject expert** for Evaluating MTech thesis, May 2023: Department of Centre for Ocean, River, Atmosphere and Land Sciences (**CORAL**), IIT Kharagpur.
- **Doctoral Scrutiny Committee member** for several Ph.D. students' evaluation process within and outside the department at NITR.
- **Member** of Curriculum development and Institute website committee, NIT Rourkela.
- **Member of GNSS purchasing and Technical bid evaluation committee** at ISR, Gandhinagar

COLLABORATORS

International

Affiliations

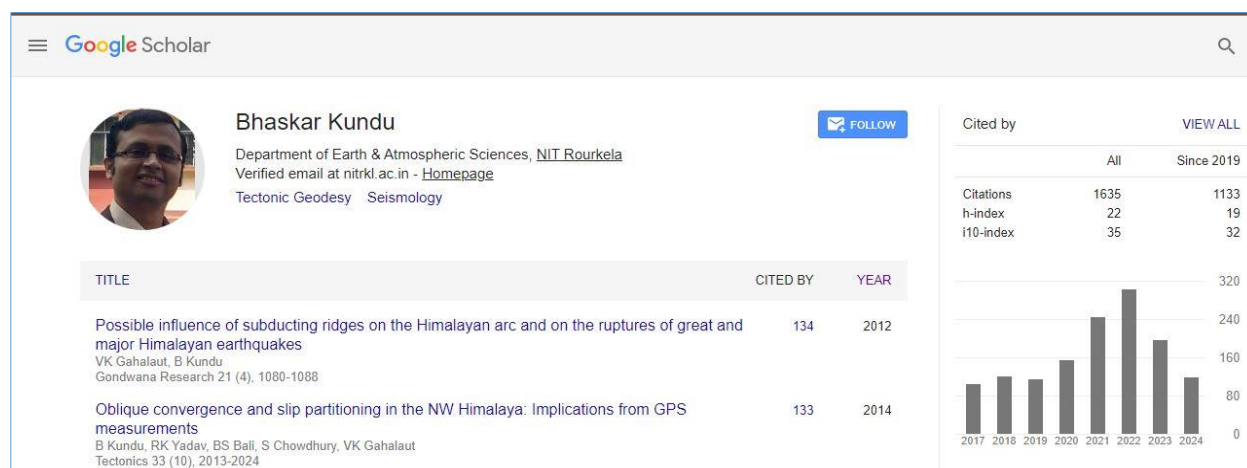
Denis Legrand	(Instituto de Geofísica, Ciudad Universitaria, UNAM, Mexico)
Roland Burgmann	(University of California, Berkeley, USA)
Abhijit Ghosh	(Department of Earth Sciences, University of California Riverside, USA)
Birendra Jha	(Chemical Engineering and Materials Science, University of Southern California, USA)
Claude Rangin	(CNRS Geoazur Nice Sophia Antipolis University, France)
Lian Xue	(University of Peking, China)
Kang Wang	(Seismological laboratory, Department of Earth and Planetary Science, UC Berkeley)
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)

National

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)

Affiliations**PUBLICATIONS AT A GLANCE (Pear reviewed articles – 72)**

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

**PEER REVIEWED PUBLICATIONS (<https://scholar.google.com/>)****(a) SCI Papers (72)**

2024

1. 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*. <https://doi.org/10.1016/j.asr.2024.06.072> (in press)

2. Senapati, B., **Kundu, B.**, Jin, S., & Santosh, M. (2024). Drought-induced seismicity modulation in the New Madrid Seismic Zone, central United States: *Geosphere*. <https://doi.org/10.1130/GES02702.1> (in press)
3. **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>
4. 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>
5. 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>
6. 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>
7. 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

8. 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>
9. 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>
10. 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>
11. **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>
12. 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>
13. 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>
14. 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

15. 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>
16. Panda, D., Samanta, S.K., Singh, M.D., Gahalaut, V.K. & **Kundu, B.**, (2022). Low-effective fault strength of a blind detachment beneath the 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>

17. **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>
18. 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>
19. 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>
20. **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>
21. 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

22. **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>.
23. 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>
24. 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>
25. 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

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

31. **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>
32. 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>
33. **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>
34. 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

35. 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>
36. **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>
37. 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>
38. 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>
39. 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>
40. **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>
41. 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

42. **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>
43. 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>
44. 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

45. **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>
46. 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>
47. 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

48. 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>
49. **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>
50. 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

51. **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>
52. **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>
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b) Non-SCI Papers/Book Chapters (5)

72. 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.
73. **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.
74. 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
75. **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>
76. 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

(c) Publications Under Review/Submitted

- Sahoo, S., Senapati, B., Panda, D., Jin S., and **Kundu B.**, (2023). Tidal triggering of seismic swarm associated with hydrothermal circulation at Blanco Ridge Ocean Transform Fault system, northeast Pacific. *Journal of Geophysical Research: Solid Earth* (communicated).
- Sahoo, S., Senapati, B., **Kundu B.**, and Jin S., (2023). Delayed triggering of non-volcanic tremors in Cascadia by the 15th January 2022 Hunga Tonga-Hunga Ha’apai volcanic eruption. *Seismological Research Letters* (communicated).
- 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).
- Ray, S., Senapati, B., **Kundu, B.** and Santosh, M. (2023). Ionospheric disturbances over Ukraine through the eyes of standalone GNSS receiver. (under review).
- Ray, S., Huba, J.D., **Kundu, B.** and 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, *JGR: Space Physics* (under review).
- 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. *Communications Earth & Environment* (communicated).
- Ray, S., **Kundu, B.**, Jin, S., Sahoo, S., & Tiwary, D.K. (2024). Discerning double coseismic travelling ionospheric disturbances following the April 2024 Hualien Earthquake, from GNSS TEC. *JGR: Space Physics* (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. Seasonal Modulation of Deep Slow-slip and Earthquakes on the Main Himalayan Thrust, AGU Fall Meeting 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. Fault resonance process and its implication on active fault system – AGU Fall Meeting 2019.
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.**, and Jin, S. (2022). Gravity-induced seismicity modulation on planetary bodies and their natural satellites. AGU Fall Meeting Abstracts 2022, S22C-0181.
9. Sahoo, S., Senapati, B., Panda, D., Jin, S., **Kundu, B.**, Tidal Triggering of Seismic Swarm Associated with Hydrothermal Circulation at Blanco Ridge Transform Fault Zone in Northeast Pacific. AGU Fall Meeting Abstracts, 2022, T12C-0109.
10. Panda, D., Lindsey, E., Senapati, B., **Kundu, B.**, Interseismic shear stress caused by variable kinematic coupling along the megathrust plate interface. AGU Fall Meeting Abstracts, 2022, G35B-0324.

IMPACT OF SCIENTIFIC CONTRIBUTIONS

In the News

- 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:** 2 awarded; 4 are pursuing.

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

Current

Sambit Sahoo (PhD)

Deepak Kumar Tiwari (PhD)

Prohelika Dalal (PhD)

Sayak Ray (PhD)



Joined

2019

2019

2021

2021

Alumni

Batakrushna Senapati (PhD) (Applied for Humboldt fellowship for Post-doc)

Dibyashakti Panda (PhD) (Joined as Fulbright Postdoctoral Researcher at

University of New Mexico, USA)

Till

2024

2021

- **Training:** Imparted training & mentored for **54** Dissertations of **Masters/PG/M.Tech** students till 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)