# C. P. Rajendran
**Adjunct Professor**
**National Institute of Advanced Studies**


## Education, Professional Experience

- Post-doctoral fellow, University of South Carolina, USA (1989-1993).
- Ph.D. 1988; Geology, Cochin University of Science and Technology, India
- M.Sc. 1978; Geology, Cochin University of Science and Technology, India.
- B.Sc. 1976; Geology, University College, University of Kerala, India.

- Professor, Geodynamics Unit, Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR) Bangalore (Nov. 5, 2013-Sept 2020)
- Ramanujan Fellow: Indian Institute of Science, Bangalore (Sept. 1, 2008-August 31, 2013),
- Research Scientist, National Centre for Earth Science Studies, Trivandrum, India (1979-1989; 1993-2008; March 10- May 31, 2015.

## Areas of Research

Geodynamics, climate and environmental studies

## Academi Honors and Awards

- Order of Merit Award 2019, Indian Society of Earthquake Sciences
- Prof. C.N. R. Rao Oration Award 2016
- National Geoscience Award, Ministry of Mines, Govt. of India (2009)
- Ramanujan National Fellowship, Department of Science and Technology, Govt. of India. (2008-2013)
- Ranked among the top ten young researchers in India by the "Outlook" Magazine (dated July 18, 2005).

## Research Themes and Study Sites

- Tsunami hazards of the Indian Ocean countries including the Makran Coast of Iran: recurrence of major earthquakes and tsunamis and its hazard implications on the Indian coast (ongoing)
- Studies along the southeastern coast of India to constrain the tsunami surges of the past (ongoing).
- The Central and Northeast Himalaya: the pattern of seismic occurrences and seismotectonic models in the central Himalaya and in the lower Assam (the Shillong Plateau) and the Upper Assam.
- Geoarchaeological studies of ancient settlements to understand anthropogenic forcing, natural calamities and climate change.
- The Andaman and Nicobar Islands: recurrence of large earthquakes and tsunamis, using coral growth patterns and onshore geology; co-seismic and interseismic crustal deformation

- Kachchh (Gujarat): to estimate the earthquake recurrence and landscape evolution in this region and the impact of active tectonics on indigenous cultures.
- Seismic hazard of the peninsular India: Tectonic evaluation and earthquake potential of the Panvel structure (Maharashtra): the earthquake potential of the Panvel structure in the Western Maharashtra and Mumbai; seismic hazard in Kerala
- Anthropogenic forcing and paleoclimatic studies using various proxies.

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## Extra-mural Research Projects

- Seismic Imaging of the Main Himalayan Thrust (MHT) using Microseisms and their bearing on the Earthquake Generation (under consideration of MoES for funding)
- Collision tectonics and seismicity in the Alpine-Himalayan belt: A comparative study between Great Caucasus (Russia) and Himalaya (India): DST- RFBR Joint Proposal; participant (2018-2021).
- Evaluation of tsunami hazard for the eastern seaboard of India; Board of Research in Nuclear Sciences (BRNS) (2017-2020).

## Publications (2020-2015)

***Research Papers:***

1. Sanwal, J., Rajendran, C. P., Karthikeyan, A. and Kusala Rajendran. 2020. Long-term Indian Ocean tsunami record reveals alternating event clusters punctuated by quiet interludes (in preparation)
2. Rajendran, C.P. 2020. Constraints on previous earthquakes from the liquefaction sites in the Kathmandu Valley associated with the 2015 Gorkha earthquake and their regional implications. Quat. Internat. (in review).
3. Rajendran, C.P., Heidarzadeh, M., Sanwal, J., Karthikeyan, A. and Rajendran, K. 2020. An orphan tsunami of 1524 on the Konkan Coast, Western India and its implications. Pure Appl. Geophys., https://doi.org/10.1007/s00024-020-02575-0
4. Revathy Parameswaran, Kusala Rajendran, Surendra Somala and Rajendran, C.P. 2020. The 2012 Mw 8.6 Indian Ocean earthquake: Deep nucleation on a listric-like fault. Physics of the Earth and Planetary Interiors, https://doi.org/ 10. 1016/j.pepi.2020.106550
5. Heidarzadeh, M., Rabinovich, A., Kusumoto, S., Rajendran, C.P. 2020 Field surveys and numerical modeling of the 26 December 2004 Indian Ocean tsunami in the area of Mumbai, west coast of India. Geophys. Jour. Internat. 222, 1952–1964 doi: 10.1093/gji/ggaa277.
6. Rajendran, C.P., Singh, T., Mukul, M., Thakkar, M., Kothyari, G., John, B. and Rajendran, K. 2020. Paleoseismological Studies in India (2016-2020): Status and Prospects, Proc Indian Nat. Sci. Acad., 86 No. 1., pp. 585-607; doi: 10.16943/ptinsa/2020/49787.
7. Rajendran, C.P. and Rajendran, K. 2020. On the trail of the great 2004 Andaman-Sumatra earthquake: Seismo-tectonics and regional tsunami history from the Andaman-Nicobar segment: In book: The Andaman Islands and Adjoining Offshore: Geology, Tectonics and Palaeoclimate. J. S. Ray and M. Radhakrishna (eds.), *The Andaman Islands and Adjoining Offshore:Geology, Tectonics and Paleoclimate*, Society of Earth Scientists Series, XV, https://doi.org/10.1007/978-3-030-39843-9_10, Springer Nature Switzerland AG 2020
8. Rajendran, C.P. 2019. Shifting paradigms: Why history matters in geological sciences. Current Science, 117 (6), 927-931.
9. Rajendran, C. P. Jaishri Sanwal, Biju John, K. Anandasabari, Kusala Rajendran, Pankaj Kumar, Manoj Jaiswal and Chopra, S. 2019. Footprints of an elusive mid-14$^{th}$ century earthquake in the central Himalaya: Consilience of evidence from Nepal and India. Geological Journal, 54, 2829-2846. https://doi.org/10.1002/ gj.3385.

10. Rajendran, C. P. 2019. Historical accounts of sea-disturbances from south India and their bearing on the penultimate predecessor of the 2004 tsunami. Seism. Res. Lett. 90 (2A), 774-783, doi: 10.1785/0220180355.
11. Jaishri, Sanwal. Rajendran, C.P. and Sheshshayee M. S. 2019. Reconstruction of the Late Quaternary climate from a paleo-lacustrine profile in the Central (Kumaun) Himalaya: Viewing the results in a regional context. Frontiers in Earth Science, https://doi.org/10.3389/feart.2019.00002.
12. Rajendran, C. P., John, B. Anandasabari, K., Sanwal, J., Rajendran, K., Kumar, P. and Chopra, S. 2018. On the paleoseismic evidence of the 1803 earthquake rupture (or lack of it) along the frontal thrust of the Kumaun Himalaya; Tectonophysics 722C, 227-234.
13. Rajendran, K., Parameswaran, R. and Rajendran, C. P. 2018. Revisiting the 1991 Uttarkashi and 1999 Chamoli, India, earthquakes: Implications of rupture mechanisms in the central Himalaya; Jour. Asian Earth Sci., 162, 107-120.
14. Rajendran, K., Parameswaran, R. and Rajendran, C. P. 2017. Seismotectonics perspectives on the Himalayan arc and contiguous areas: Inferences from past and present earthquakes. Earth Science Reviews, 173, 1-30, doi: 10.1016/ j.earscirev. 2017.08.003.
15. Rajendran, C. P., John, B., Rajendran, K. and Sanwal, J. 2016. Liquefaction record of the great 1934 earthquake predecessors from the north Bihar alluvial plains of India. Jour. Seismology, 20(3), 733-745; doi: 10.1007/s10950-016-9554-z.
16. Rajendran, C.P. 2016. Paleoseismology: 2010-2016. Proc. Indian Nat. Sci. Acad. 82, (3) Spl Issue 2016 pp. 695-704; doi: 10.16943/ptinsa/2016/48478
17. Rajendran, C.P., Sanwal, J., Morell, K., Sandiford, M., Kotlia, R.S., John Hellstrom and Rajendran, K. 2016. Stalagmite growth perturbations from the Kumaun Himalaya as potential earthquake recorders, Jour. Seismology, 20, 579-594; doi 10.1007/s 10950-015-9545-5.
18. Rajendran, C.P., John, B. and Rajendran, K. 2015. Medieval pulse of great earthquakes in the central Himalaya: Viewing past activities on the frontal thrust Jour. Geophys. Res., 120, 1623-1641, doi: 10.1002/2014JB011015.
19. Paul, J. and Rajendran, C.P. 2015. Short-term pre-2004 seismic subsidence near South Andaman: Is this a precursor slow slip prior to a megathrust earthquake? Physics of the Earth and Planet. Int. doi:10.1016/j.pepi.2015.08.006.
20. Morell, K.D., Sandiford, M., Rajendran, C.P., Rajendran, K., Alimanovic, 1, A., Fink, D and Sanwal, J., 2015. Geomorphology reveals active dècollement geometry in the central Himalayan seismic gap, Lithosphere, 7, 247-256; doi:10.1130/L407.1
21. Parameswaran, R., Thulasiraman, N., Rajendran, K., Rajendran, C.P., Mullick, R., Wood, M. and Lekhak, H. 2015. Seismotectonics of the April-May 2015 Nepal earthquakes: An assessment based on the aftershock patterns, surface effects and deformation characteristics. Asian Jour. Earth Sci., 111, 161-174; doi:10.1016/j.jseaes.2015.07.030.

**Commentaries/Book Reviews/General Articles**

1. Rajendran, C.P. 2020. The Char Dham Road Project Is Indeed a Himalayan Blunder. The Wire, September 2, 2020.
2. Rajendran, C.P. 2020 Charles Lyell: The man Who Unlocked the Earth's Sprawling History. Resonance, Vol. 25, Issue 7, pp. 895-909.
3. Rajendran, C.P. 2020. Guest Editorial, Resonance, Vol. 25, Issue 7, pp. 887-891.
4. Rajendran, C.P. 2020. New Notification Makes It Clear That Govt Sees EIA As a Hindrance. The Quint, June 04, 2020.
5. Rajendran. C.P. 2020. New Draft EIA Protocol Will Leave Us Vulnerable to Environmental Exploitation. The Wire, June, 04,2020
6. Rajendran, C.P. 2020. Review: Annual Review of Earth and Planetary Sciences, 2020: Jeanloz Freeman (Ed.), Palo Alto, California. Current Science, Vol. 118, p. 1310-1311.
7. Rajendran, C.P. 2020. A pandemic is the price we pay for ignoring the warnings, The Wire March 30, 2020.
8. Rajendran, C.P. 2020. Closing the gender gap in science. The Hindu, March 17, 2020.

9. Rajendran, C.P. 2020. Compromising scientific curiosity for marketability. The Hindu, January 30, 2020.
10. Rajendran, C. P. 2020. How Did Mata Amritanandamayi Devi Become the First Author of a Scientific Paper? The Wire, January 24, 2020.
11. Rajendran, C.P. 2019. The shrinking space for scientific temper in India is worrying. The Wire, Nov. 4, 2019.
12. Rajendran, C.P. 2019. Rajendran, C.P. 2019. The Science and Chaos of Complex Systems. The Wire, October 17, 2019
13. Rajendran, C.P. 2019. A Gadfly's Perspective on Human Spaceflight. The Wire, 27 September.
14. Rajendran, C.P. 2019. Scientists Part of Studies Supporting Aryan Migration Endorse Party Line Instead. The Wire, 13, September 2019
15. Rajendran, C.P. 2019. How did India end up staring at a water-uncertain future? The Wire, 09, September 2019
16. Rajendran, C.P. 2019. Dear minister: For heaven's sake, stop peddling pseudoscience. The Wire, 29 August 2019
17. Rajendran, C.P. 2019. Kerala's floods remind us of what happens when we abandon sustainability. The Wire, 28th August.
18. Rajendran, C.P. 2019. Review: Annual Review of Earth and Planetary Sciences, 2018: Jeanloz Freeman (Ed.), Palo Alto, California. Current Science, Vol. 117, p. 520-521.
19. Rajendran, C.P. 2019. It's the environment, stupid. The Wire, 28th July.
20. Rajendran, C.P. 2019. Why India's incredible Geodiversity Needs to be Legislated ASAP. The Wire, 16 July 2019
21. Rajendran, C.P. 2019. An Earth Unbound: Why do we struggle to Understand Our Planet? The Wire, 28th June 2019
22. Rajendran, C.P. 2019. The Significance of the Allah Bund Earthquake, 200 years on. The Wire, 05 June 2019
23. Rajendran, C.P. 2019. The Scientist as Rebel in the Indian Cultural Milieu. The Wire, May 16, 2019
24. Rajendran, C.P. 2019. Extreme Events in the Himalayan Region: Are We Prepared for the Big One? The Wire, May 5, 2019
25. Rajendran, C.P. and Kusala Rajendran, 2019. Post-flood vision of a new Kerala. In: Social Science in Perspective. Quat. Jour. Achutha Menon Study Centre and Library, Thiruvananthapuram- Special Issue on "Common Property and Citizens Rights: Issues of reconstruction of Kerala., p. 450-462.
26. Rajendran, C.P. 2019. Extreme Events in the Himalayan Region: Are We Prepared for the Big One? The Wire, May 5 2019 https://thewire.in/environment/extreme-events-in-the-himalayan-region-are-we-prepared-for-the-big-one
27. Rajendran, C.P. 2019. The Meghalayan Plateau is a geological marvel under ecological threat The Wire, April 14th, 2019; https://thewire.in/the-sciences/the-meghalayan-plateau-is-a-geological-marvel-under-ecological-threat
28. Rajendran, C.P. 2019... The day of the outsider. Review of the book "Gene Machine" Gene Machine: The Race to Decipher the Secrets of the Ribosome | Venki Ramakrishnan, Harper Collins India, 288 pages. Open Magazine, 22 February 2019.
29. Rajendran, C.P. 2019. Review of the book: "Third Thoughts" by Steven Weinberg. Current Science, 116, p. 134.
30. Rajendran, C.P. 2019. Mind and Matter. Review of the book The Man Who Wasn't There by Anil Ananthaswamy, Viking, 308 Pages |Through Two Doors at Once by Anil Ananthaswamy | Viking, 308 Pages; Open Magazine, 18 January 2019.
31. Rajendran, C.P. 2019. Saraswati: The River That Never Was, Flowing Always in the People's Hearts, The Wire, Feb 26th, 2019; https://thewire.in/the-sciences/the-saraswati-is-a-river-that-never-was-and-flowed-always-in-the-peoples-hearts

32. Rajendran, C.P. 2018. 14 Years After a Monster Tsunami, What Do We Know of the Quake That Caused It? The Wire, Dec 26th, 2018; https://thewire.in/the-sciences/2004-indian-ocean-gps-earthquake-tsunami-advance-warning
33. Rajendran, C.P. 2018. What's Ailing the Ganga? The Wire. Oct 24th, 2018; https://thewire.in/environment/whats-ailing-the-ganga
34. Rajendran, C.P. 2018. Why Does India's Geological Heritage Remain an Un-championed Cause? The Wire. Oct. 10th, 2018; https://thewire.in/the-sciences/why-does-indias-geological-heritage-remain-an-unchampioned-cause
35. Rajendran, C.P. 2018. In the Aftermath of a Great Flood, a Vision of a New Kerala. The Wire. Sept. 22nd, 2018; https://thewire.in/environment/in-the-aftermath-of-a-great-flood-a-vision-of-a-new-kerala
36. Rajendran, C.P. 2018. If Earth Were a Novel, Would the Historical Sciences Be Reliable Narrators? The Wire, Aug. 3rd, 2018; https://thewire.in/the-sciences/if-earth-were-a-novel-would-the-historical-sciences-be-reliable-narrators
37. Rajendran, C.P. 2018. Is the Meghalayan Event a Tipping Point in Geology?. The Wire. July 23rd, 2018; https://thewire.in/the-sciences/is-the-meghalayan-event-a-tipping-point-in-geology
38. Rajendran, C.P. 2018 What Next: Review of the book Searching for Stars on an Island in Maine | Alan Lightman | Pantheon; Open Magazine, 20 July 2018.
39. Rajendran, C.P. 2018. Five Years After Uttarakhand Floods: Five Years of Disregard for the Himalaya; The Wire. June 24th, 2018; https://thewire.in/environment/five-years-after-uttarakhand-floods-only-disregard-for-the-himalaya
40. Rajendran, C.P. 2018. Review: Annual Review of Earth and Planetary Sciences, 2017: Jeanloz Freeman (Ed.), Palo Alto, California. Current Science, Vol. 114, p. 2390-2391.
41. Rajendran, C.P. 2018. The Archaeological Survey bars the beleaguered face of Indian heritage. The Wire. May 18th, 2018; https://thewire.in/the-sciences/the-archaeological-survey-bears-the-beleaguered-face-of-indian-heritage
42. Rajendran, C.P. 2018. Towards a less xenophobic appreciation of India's ancient knowledge. The Wire.April 3rd, 2018; https://thewire.in/the-sciences/towards-a-less-xenophobic-appreciation-of-indias-ancient-knowledge
43. Rajendran, C.P. 2018. What Does It Mean to Be Alive in the Human Epoch? The Wire. March 24th, 2018; https://thewire.in/science/what-does-it-mean-to-be-alive-in-the-human-epoch
44. Rajendran, C.P. 2018. The Archaeological Survey bars the beleaguered face of Indian heritage. The Wire. May 18th, 2018; https://thewire.in/the-sciences/the-archaeological-survey-bears-the-beleaguered-face-of-indian-heritage
45. Rajendran, C.P. 2018. Leonardo da Vinci: The Science of Genius. Review of the book "Leonardo da Vinci by Walter Isaacson. Open Magazine, March 3, 2018
46. Rajendran, C.P. 2018. Charles Darwin, A Punching Bag for the Religious Right. The Wire. Jan 24th, 2018; https://thewire.in/science/charles-darwin-punching-bag-religious-right
47. Rajendran, C. P. 2018. A Post-Truth Take on the Ram Setu. The Wire, Jan. 6th, 2018; https://thewire.in/media/post-truth-take-ram-setu
48. Rajendran, C.P. 2017.Gangetic blunders. Review of the book "River of life, River of Death" by Victor Mallet. Open Magazine, Dec. 14th, 2017.
49. Rajendran, C.P. 2017. The Ram Sethu canal must be scrapped for scientific reasons. The Wire, 22-11-2017; https://thewire.in/environment/ram-sethu-canal-must-scrapped-scientific-reasons
50. Rajendran, C. P. 2017. Isha foundation's policy doc to revive rivers is high on hope, low on reality. The Wire, 27-10-2017 https://thewire.in/environment/isha-foundation-jaggi-vasudev-rally-for-rivers-dams-agro-forestry.
51. Rajendran, C. P. 2017. The scary side of linking our rivers. The New Indian Express, September 11, 2017.
52. Rajendran, C.P. 2017. The stories rocks tell. The Hindu, August 29, 2017.

53. Rajendran, C. P. 2016. A matter of genius: on the book "A life in Science" by C N R Rao. Open Magazine, 7-13, February 2017. Vol. 9, Issue 6, p. 84-85.
54. Rajendran, C. P. Conversion of forests biggest threat to Himalayan biodiversity. Tree Take, Vol. 1, January 15, 2017, p. 14-15.
55. Rajendran, C. P. Violation of land use laws weigh heavy on Himalaya. Tree Take, Vol. 11, December 15, 2017, p. 14-15.
56. Rajendran, C.P. 2017. Review: Annual Review of Earth and Planetary Sciences, Vol. 44, 2016: Jeanloz Freeman (Ed.), Palo Alto, California. Current Science, Vol. 112, p. 1277-1279.
57. Rajendran, C. P. 2016. Pre-earthquake process and the 2004 tsunami. Geography and You, Vol. 15, p. 7-10.
58. Rajendran, C. P. 2015. Review: Annual Review of Earth and Planetary Sciences, Vol. 43, 2015: Jeanloz Freeman (Ed.), Palo Alto, California. Current Science, Vol. 110, p. 919-921.
59. Rajendran, C. P. 2015. Developing a disaster management strategy. Geography and You, Vol. 14, 11-14.
60. Rajendran, C. P. 2015. Taking a comprehensive view of quakes. The Hindu, May 18, 2015
61. Rajendran, C.P. 2015. Review: Annual Review of Earth and Planetary Sciences, Vol. 42, 2014: Jeanloz Freeman (Ed.), Palo Alto, California. Current Science, Vol. 108, p. 283-285.

**Book Assignments (2020)**

1. Earthquakes of Indian subcontinent (2020) (to be published by Springer; in preparation with co-author Kusala Rajendran (Science).
2. An Unquiet Land: Sketches of Indian Earthquakes (in preparation with Kusala Rajendran); to be published by Penguin Random House

**Special Issue: Quaternary International (2020; in preparation)**

Theme: Dynamic Terrains
Editors: Tejpal Singh, CP Rajendran and Sushil Rohella