

Batakrushna Senapati

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Education:

- Bachelor of Science in Geology (Hons.), Nimapara College, Nimapara, Puri, Odisha, India, 2008-2011.
- Master of Science in Applied Geology, Utkal University, Bhubaneswar Odisha, India, 2011-2013.
- Master in Technology in Exploration Geoscience, Indian Institute of Technology, Kharagpur, West Bengal, India, 2014-2016
- Doctor of Philosophy (Ph.D.), National Institute of Technology Rourkela, 2018-present.

Research Interest:

My research interest involves Earthquakes and fault dynamics modulation along active fault by external normal and shear stress perturbation, examined by using single degree of freedom spring-block model incorporating with rate- and state- dependent friction law. I am also interested in assessing the non-tectonic deformation and its interaction with tectonic deformation, seasonal mass oscillation and associated crustal deformation process, which can be captured and modelled by using GPS as well as Gravity Recovery and Climate Experiment (GRACE) satellite data. Moreover, I am also well versed in modulation of earthquakes and crustal deformation along plate interior and plate boundary by Fault resonance process induced by different surficial loading such as reservoir induced load, hydrological load and tidal load.

I am currently working on the Fault resonance process and its implication on active fault system. It has been proposed that very small variation in normal and shear stress induced by surficial loads may influence the fault dynamics and ultimately destabilize the fault zone by resonance process. However, the exact interaction between these periodic load oscillations and associated fault resonance process is still debatable.

Publications:

- Panda, D., **Senapati, B.**, Tyagi, B. and 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, pp.225-233.
- Kundu, B., **Senapati, B.** and Santosh M., 2019. Surface gravity and crater diameter as proxies of extra-terrestrial impact. *Icarus*, 331, pp.62-68.

Conference Presentations:

- **Senapati, B.,** Panda, D., and Kundu, B., Hydrological load induced seasonal deformation and earthquakes modulation along the main Himalayan thrust. International Workshop on Climate Change and Extreme Events in the Himalayan Region. *IIT Mandi, 2019.*
- **Senapati, B.,** Kundu, B., Singh., A. Fault resonance process and its application on active fault system. *AGU Fall Meeting, San Francisco CA, 2019.*

Awards and Grants:

2011: Achieved rank one position in B.Sc. Geology (Hons) for the Year of 2008-11 from Utkal University, Bhubaneswar.

2011-2013: Awarded scholarship from Institute of Mathematics and Applications, Bhubaneswar, Odisha.

2014, 2017: Qualified GATE: 2016 (Rank- 353); 2017 (Rank- 379).

2017: Qualified CSIR NET: Lectureship December 2017 (Rank-66)