

Swastik Suman Behera

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113, ESB-3, Department of Earth Sciences, Indian Institute of Technology Kanpur, Kanpur, Uttar Pradesh, India - 208016

Education

Indian Institute of Technology Kanpur <i>PhD in Geological Sciences</i> CPI: 9.84/10	Aug 2023 – Present <i>Kanpur, India</i>
Indian Institute of Science Education and Research Kolkata <i>Bachelor and Master in Geological Sciences</i> Major: Geological Sciences, Minor: Mathematical Sciences CGPA: 8.46/10	Aug 2017 – Jul 2022 <i>Kolkata, India</i>

Research Experience

PhD Candidate, IIT Kanpur - Supervisor: Dr. Amar Agarwal - Topic: Microstructural, experimental and simulation-based studies to understand the mechanism of fast deformation in heterogeneous targets due to shock waves - Study area: Dhala impact structure, Madhya Pradesh, India	Aug 2023 – Present
Research Intern, IIT Kanpur - Supervisor: Dr. Amar Agarwal - Mapping the microfracturing and lattice deformation intensity in the monomict breccia from the Dhala impact structure	Sep 2022 – Apr 2023
Master Thesis Student, IISER Kolkata - Supervisor: Dr. Kathakali Bhattacharyya - Thesis title: Characterization of vein sets and estimation of stress orientations and stress ratios: Insights from the Buxa dolomite, Main Boundary thrust sheet, Siang valley, Arunachal Lesser Himalaya	Feb 2020 – Apr 2022

Teaching Experience

Graduate Teaching Assistant for –

- Fundamentals of Earth Science Universe and its Characteristics (*IIT Kanpur*)
- Field Geology (Structural Geology) (*IIT Kanpur*)
- Volcanology (*IIT Kanpur*)
- Introductory course on Earth and Planetary Sciences (*IISER Kolkata*)

Qualified Exams and Fellowships

- Graduate Aptitude Test in Engineering (Geology and Geophysics) 2023
- National Eligibility Test (Earth, Atmospheric, Ocean and Planetary Sciences) 2023

Publications

- **Behera, S. S.,** Tiwari, S., Pandey, A. K., Agarwal, A., Ojha, A. K. (2024). The probable direction of impact at Dhala impact structure, India deciphered from microfracture intensity and X - ray diffractometry: a new potential impact direction indicator. *Earth, Planets and Space*, 76(83), 1–11. <https://doi.org/10.1186/s40623-024-02028-1>

Conferences

- Sahoo, A., **Behera, S. S.,** Bhattacharya, S., Agarwal, A. (2025). VNIR-FTIR Spectral Characterization of Monomict Breccias from the Dhala Impact Structure, India. *American Geophysical Union 2025*. <https://agu.confex.com/agu/agu25/meetingapp.cgi/Paper/1859954>
- **Behera, S. S.,** Tiwari, S., Pandey, A. K., Agarwal, A., Ojha, A. K. (2024). The probable direction of impact at Dhala impact structure, India deciphered from microfracture intensity and X-ray diffractometry: a new potential impact direction indicator. *Rock Deformation & Structures* 8.
- **Behera, S. S.,** Bhattacharyya, K. (2022). Characterization of vein-sets and estimation of stress orientations and stress ratios from the Buxa dolomite, Main Boundary thrust (MBT) sheet, Siang Valley, Arunachal Lesser Himalaya. *European Geosciences Union General Assembly 2022*, 9169. <https://doi.org/10.5194/egusphere-egu22-9169>

Workshops

- **Mastering Shock, Impact & Blast Simulations with Ansys LS-DYNA** at *IIT Kanpur*, 2026
- **Analytical Microscopy in the Earth and Planetary Sciences** (virtual) by *The Geological Society of London*, 2026
- **Emerging Hydroclimatic Extremes and Approaches**, at the *IIT Roorkee*, 2023
- **Processes in the Continental Crust** by the *Department of Earth Sciences, IISER Kolkata*, 2021
- **Overview of Geoprocessing using Python**, organized by the *IIRS Dehradun*, 2021

Skills

- **Languages:** English, Hindi, and Odia
- **Programming:** Python and MATLAB
- **Shock simulations:** iSALE 2D

Outreach

- Core team, *Earth Science Society, IIT Kanpur* (2023 - 2024)
- Core team, *European Association of Geoscientists and Engineers (EAGE) Student Chapter at IIT Kanpur* (2024 - present)
- Represented the Department of Earth Sciences, IIT Kanpur at the *Society of Petroleum Geophysicists (SPG India)*'s 15th biennial international conference, 2025