SANKHA SUBHRA MAHANTI

Graduate Student (Ph.D.), Department of Geosciences, University of Arizona

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EDUCATION

- **Ph.D. in Geosciences (ongoing)** *August 2021 - Present*
  Department of Geosciences, University of Arizona Tucson, United States
  - Advisor: Eric Kiser
- **Integrated BS-MS in Physics** *July 2016- July 2021*
  Department of Physical Sciences, Indian Institute of Science Education and Research (IISER) Kolkata Kolkata, India
  - GPA: 9.09/10.00

RESEARCH EXPERIENCE

- **Graduate Research Associate** *May 2023 - Present*
  Department of Geosciences, University of Arizona, Tucson, United States
- **Graduate Research Assistant** *January 2022 - December 2022*
  Department of Geosciences, University of Arizona, Tucson, United States
- **MS Student** *August 2019 - June 2021*
  Computational Seismology Lab, IISER Kolkata, Kolkata, India
- **Summer Intern** *June 2019 - July 2019*
  Earthquake Research Institute, University of Tokyo, Tokyo, Japan
- **Summer Intern** *May 2018 - July 2018*
  Computational Seismology Lab, IISER Kolkata, Kolkata, India

PROJECTS

- **Crustal Imaging of the Southern Central Andes by Seismic Autocorrelation** 2024-Present
  - Developing a coding framework to perform autocorrelation on ambient noise and seismic P-wave coda.
  - Using broadband and nodal seismic data from TANGO seismic deployment in Chile and Argentina.
  - The goal is to image the Moho, crustal discontinuities, and shallow detachment faults.
- **Orogen-Parallel Variations in Seismicity in the Central Andes** 2023-Present
  - Used broadband and nodal seismic data from TANGO seismic deployment in Chile and Argentina.
  - Applied a deep-learning framework for earthquake detection.
  - Developed and compared two earthquake catalogs along two transects of Central Andes.
- **Seismicity and Present Day Crustal Deformation in the Southern Puna Plateau** 2022-2023
  - Implemented a deep-learning framework for low-magnitude earthquake detection.
  - Developed a new earthquake catalog, stress model, and seismic tomography model of Puna plateau.
  - Identified the variations of crustal deformation for different segment of the Puna plateau.

PUBLICATIONS

C=CONFERENCE, J=JOURNAL, S=IN SUBMISSION

[J.1] Mahanti, S. S., Kiser, E., Beck, S. L., & Hughes, A. N., (2024), **Seismicity and Present Day Crustal Deformation in the Southern Puna Plateau**. Journal of Geophysical Research: Solid Earth, 129, e2024JB028918. https://doi.org/10.1029/2024JB02891

[C.1] Mahanti, S. S., Kiser, E., Beck, S., Roecker, S. W., Porter, R. C., Comte, D., ... & Ducea, M. N. (2023). **Orogen Parallel Variations in Seismicity in the Central Andes Recorded by the TANGO Seismic Deployment**. *In AGU Fall Meeting Abstracts*, (Vol. 2024, pp. T51B-3142)

[C.2] Mahanti, S. S., Kiser, E., Beck, S., Roecker, S. W., Porter, R. C., Comte, D., ... & Ducea, M. N. (2023). **Seismic Imaging of Southern Central Andes by Ambient Noise Autocorrelation of Nodal Seismic Data**. *In AGU Fall Meeting Abstracts*, (Vol. 2024, pp. S21C-3438)

[C.3] Mahanti, S. S., Kiser, E., Beck, S., Roecker, S. W., Porter, R. C., Comte, D., ... & Ducea, M. N. (2023). **Preliminary Earthquake Catalog of the Southern Central Andes (23-24°S) Recorded by the TANGO Seismic Deployment**. *In AGU Fall Meeting Abstracts*, (Vol. 2023, pp. T21F-0254)

[C.4] Mahanti, S. S., Kiser, E., & Beck, S. L. (2022). **Crustal Seismicity in the Southern Puna Plateau and Relation With Shallow Crustal Structures.**. *In AGU Fall Meeting Abstracts*, (Vol. 2022, pp. S55A-03)

[C.5] Mahanti, S. S., Mitra, S., & Miyake, H. (2020). **Teleseismic Source Modelling of Strong-to-major Himalayan Earthquakes**. *In AGU Fall Meeting Abstracts*, (Vol. 2020, pp. S037-0015)

Skills

- **Programming & Scripting Languages:** Python, Matlab, Fortran, Shell
- **Research Skills:** Earthquake Detection, Seismic Imaging, Seismic Source Modeling, Machine Learning
- **Languages:** English, Bengali, Hindi

Fieldwork Experience

- **Nodal seismometer deployment in Flagstaff, Arizona** *2023-2024*
  Deployed and maintained (monthly swapping) a 2D array of 46 nodal seismometers for a year.
- **Nodal seismometer deployment in Argentina** *2022*
  Deployed 150 nodal seismometers on a linear array as a part of the TANGO seismic deployment.

Teaching Experience

- **Graduate Teaching Assistant (Course: Introduction to Geophysics)** *Spring 2025*
  Department of Geosciences, University of Arizona, United States
- **Graduate Teaching Assistant (Course: Introduction to Oceanography)** *Spring 2023*
  Department of Geosciences, University of Arizona, United States
- **Graduate Teaching Assistant (Course: Introduction to Geophysics)** *Fall 2021*
  Department of Geosciences, University of Arizona, United States
- **Teaching Assistant (Course: Thermal Physics)** *Spring 2021*
  Department of Physical Sciences, IISER Kolkata, India
- **Teaching Assistant (Course: Mathematical methods II)** *Fall 2020*
  Department of Physical Sciences, IISER Kolkata, India

Honors and Awards

- **Best Geophysics Talk | Annual symposium of UAGeosciences** 2025
- **Invited Speaker at TEDx University of Arizona.** 2024
- **Winner of University of Arizona GradSlam (Best 3-minutes research presentation)** 2024
- **Best Geophysics Talk | Annual symposium of UAGeosciences** 2023
- **Best Geophysics Talk | Annual symposium of UAGeosciences** 2022
- **Selected in Sakura Science Exchange Program | Japan Science and Technology (JST)** 2019

Grants and Fellowships

- **Peter Coney Fellowship** 2025
  $5000 from the Department of Geosciences, University of Arizona.
- **Sumner, John, and Nancy Scholarship** 2024
  $900 from the Department of Geosciences, University of Arizona.
- **Society of Exploration Geophysicists (SEG) Scholarship** 2024
  $1728 for academic year 2024-2025.
- **UA Graduate and Professional Student Council Travel Grant** 2023
  $850 to attend AGU Fall Meeting 2023.
- **Society of Exploration Geophysicists (SEG) Scholarship** 2022
  $5000 for academic year 2022-2023.
- **UA Graduate and Professional Student Council Travel Grant** 2022
  $970 to attend AGU Fall Meeting 2022.
- **Sumner, John, and Nancy Scholarship** 2021
  $4676 from the Department of Geosciences, University of Arizona.
- **INSPIRE Scholarship from Department of Science and Technology (DST), India** 2016-2021
  INR 60000/Year for 5 years during integrated BS-MS Program.

References

1. **Dr. Eric Kiser**
   Associate Professor, Department of Geosciences
   University of Arizona
   Email: ekiser@arizona.edu
   Relationship: Ph.D. Advisor

2. **Prof. Susan Beck**
   Professor, Department of Geosciences
   University of Arizona
   Email: slbeck@arizona.edu