CURRICULUM VITAE

Dr. Asutosh Acharya
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Educational qualifications

- **PhD (Climate Sciences):** School of Earth, Ocean and Climate Sciences, Indian Institute of Technology (IIT) Bhubaneswar, India.
- **Postgraduate Diploma in Environmental Law and Policy:** National Law University-World Wide Fund, New Delhi, India (A grade).
- **M.Phil. (Oceanography):** Berhampur University, Odisha, India (78%)
- **M.Sc. (Oceanography and Meteorology):** Berhampur University, Odisha, India (*Gold Medalist*-82.62%)
- **B.Sc. (Physics hons. with distinction):** Utkal University, Odisha, India (78.5%)

Research Experiences

1. **Chief Climate Scientist**: April 2024- Present: Aurassure, India (Building the most efficient sensor network to monitor environmental challenges focusing on weather, air quality, and flood and contributing to climate risk assessment and climate change modeling.
2. **Post-Doctoral Researcher:** April 2023-April-2024-National Center for Atmospheric Research, USA (Aerosol-monsoon interactions, Climate modeling, Geo-Engineering, Climate change, and projection).
3. **Climate Scientist**: July 2022-April 2023 - Chubb Science Center (Natural perils, Climate Change, Atmospheric Science, Catastrophe Modelling).
4. **Consultant-II:** (June 2021-July 2022)- AON Reinsurance Solutions (Climate and Atmospheric Science Research, Catastrophe Modelling, and Model Evaluation).
5. **Project Scientist-B:** (June 2018 - June 2021)- ESSO-National Centre for Polar and Ocean Research (NCPOR), Goa (Aerosol, Cloud and Precipitation Monitoring/ Modelling in the Arctic).
6. **Junior and Senior Research Fellow:** (May 2014 - June 2018)- School of Earth Ocean and Climate Sciences (SEOCS), Indian Institute of Technology (IIT) Bhubaneswar (Aerosol-Monsoon Interactions, Global and Regional climate modeling, field observation).
7. **Junior Research Fellow:** (March 2014 - May 2014)- Department of Civil Engineering, Indian Institute of Technology (IIT) Kharagpur. (Hydrologic sensitivity to Cryosphere Aerosol interaction in mountain processes).
8. **Junior Research Fellow:** (April 2013 - March 2014)- Department of Marine Sciences, Berhampur University. (INCOIS sponsored SATCORE Project)

Teaching Experiences

1. Visiting Faculty (Climate Change and Climate Modelling), School of Suitability, XIM University, Bhubaneswar. Jan-June 2024.
2. Faculty for the Climate Change (BA sustainable development program) jointly offered by XIM University, Bhubaneswar, and Jesuit Online Learning (JWL), March-May 2024.
3. Teaching Assistant for the courses "Modeling and Visualization" and "Observation Techniques in Atmospheric Sciences" in the School of Earth Ocean and Climate Sciences for Master of Science/Technology (M.Sc./MTech) students for the year 2015 - 16, IIT Bhubaneswar, India.
4. Teaching Assistant for the course "Basics of Ocean and Atmospheric Sciences" for Master of Science (M.Sc.) in Geophysics at the Department of Geophysics for the year 2014 at Berhampur University, Odisha, India.

Research interests

Solar Geo-engineering, Air Quality, Indian Monsoon, Regional and Global climate modeling, Climate change/variabilities, Climate risk, Aerosol-Precipitation interactions, Remote Sensing applications, Observations and instrumentations.

Programming /Software

- Software and programming/visualisation: MATLAB, Grads, NCL, Ferret, CDO, Python, Panoply, SQL
- Data Science
- Machine Learning.
- Well-experienced in Statistics, High-Performance computing,
- Shell Scripting
- Satellite Data

Modelling Skills

- Climate and weather modelling
- WRF (Weather Model), RegCM (Regional Climate Model), CESM-CAM (Global Climate Model), SPEEDY
- Hands-on experience in Satellite, In-situ and Reanalysis data analysis and interpretation.
- Statistical and dynamical downscaling
- Well-experienced with analysis of CORDEX and CMIP (5/6) datasets.

Industrial Skills

- Bigdata handling, Statistics
- Catastrophe models: RMS, AIR, and IF
- Climate Scenarios analysis, Environmental, social and governance (ESG)
- Sustainable Development Goals (SDG)

Field Experience

- Participated in **Southern Ocean Expedition** (SOE11), from January-March 2020
- Participated in ORV Sagar Sampada -314 (**Arabian Sea**) From 4-26 March 2013
- Participated in several offshore and estuary trawler field trips at the southern coast of Odisha.

Instruments Operated

Hyperspectral Underwater Radiometer, Sun-photometer, Global Positioning System, aethalometer, ceilometer, micro rain radar, Aerodynamic Particle Sizer (APS), Automatic Weather Station.

List of publications

1. **A. Asutosh**, V Vinoj, K Landu, H Wang (**2024**), Fast response of global monsoon area and precipitation to regional carbonaceous aerosols. *Atmospheric Research.* https://doi.org/10.1016/j.atmosres.2024.107354. (**IF:5.5**).

2. **A. Asutosh** and V. Vinoj (**2024**), Understanding the roles of local absorbing aerosols in modulating Indian summer monsoon rainfall using a regional climate model. 168663.*Scitotenv*. https://doi.org/10.1016/j.scitotenv.2023.168663. **(IF: 9.8).**

3. Suvarna Fadnavis[#], **A. Asutosh**[#] Prashant Chavan, Rakshit Thaware, Simone Tilmes (**2024**), Amplified drying in South Asian summer monsoon precipitation due to anthropogenic sulfate aerosols. *Environmental Pollution* (#contributed equally). https://doi.org/10.1016/j.envpol.2023.123175. **(IF: 8.9).**

4. **A. Asutosh**, V. Vinoj, H. Wang, K. Landu, Jin-Ho Yoon **(2022)**, Response of Indian summer monsoon rainfall to remote carbonaceous aerosols at short time scales: Teleconnections and Feedbacks. *Environmental Research*.214,113898 https://doi.org/10.1016/j.envres.2022.113898. **(IF: 8.3).**

5. **A. Asutosh,** Vinoj V, Murukesh N, Ramisetty R, Mittal N. **(2022)** Investigation of June 2020 giant Saharan dust storm using remote sensing observations and model reanalysis. *Scientific Report.* 12, 6114 https://doi.org/10.1038/s41598-022-10017-1. **(IF: 4.6).**

6. **A. Asutosh**, Fadnavis S, Chavan P, Sabin TP and Müller R (**2022**), Abrupt emission reduction during COVID-19 intensified the spring 2020 rainfall over India. Front. Environ. Sci. 10:911363. https://doi.org/10.3389/fenvs.2022.911363. **(IF: 4.6).**

7. **A. Asutosh**, SK Pandey, V Vinoj, R Ramisetty, N Mittal. **(2021)** Assessment of Recent Changes in Dust over South Asia Using RegCM4 Regional Climate Model. *Remote Sensing*. 13(21):4309. https://doi.org/10.3390/rs13214309. **(IF: 5.0).**

8. **A. Asutosh**, Fadnavis S, Nuncio M, Müller R and Tripathy SC **(2021)** The Arctic Temperature Response to Global and Regional Anthropogenic Sulfate Aerosols. Front. Environ. Sci.9:766538. https://doi.org/10.3389/fenvs.2021.766538. **(IF: 4.6).**

9. **A. Asutosh,** Chatterjee S, MP Subeesh, A Radhakrishnan, N, Murukesh **(2021)**. Observation of Cloud Base Height and Precipitation Characteristics at a Polar Site Ny-Ålesund, Svalbard Using Ground-Based Remote Sensing and Model Reanalysis. *Remote Sensing.* 2021; 13(14):2808. https://doi.org/10.3390/rs13142808. **(IF: 5.0).**

10. Rohit Srivastava, **A. Asutosh,** Sabu P, Anil kumar N., Investigation of Black Carbon characteristics over Southern Ocean: Contribution of fossil fuel and biomass burning. *Environmental Pollution*. https://doi.org/10.1016/j.envpol.2021.116645. **(IF: 8.9).**

11. T. Mukherjee, **A. Asutosh**, S. K. Pandey, L. Yang, A. Panwar, P. P. Gogoi and V. Vinoj **(2018)** Increasing Potential for Air Pollution over Megacity New Delhi: A Study Based on 2016 Diwali Episode. *Aerosol and Air Quality Research* https://doi.org/10.4209/aaqr.2017.11.0440. **(IF: 4.0).**

12. M. Nuncio, R. Athulya, Naveen Nandanan, Sourav Chatterjee, K. Satheesan, **Asutosh Acharya**, M. P. Subeesh & P. J. Vidya (2023). Hails in Ny Alesund, Svalbard atmospheric vertical structure and dependence on circulation. *Nat Hazards* https://doi.org/10.1007/s11069-023-05907-0 . **(IF: 3.9).**

13. Fadnavis, Suvarna, Prashant Chavan, Akash Joshi, Sunil Sonbawne**, Asutosh Acharya,** Panuganti Devara, Alexandru Rap, and Rolf Müller. **(2022)** Tropospheric warming over the North Indian Ocean caused by the South Asian anthropogenic aerosols: possible implications. *Atmospheric Chemistry and Physics.* https://doi.org/10.5194/acp-22-7179-2022. **(IF: 6.3).**

14. Nuncio, M., Satheesan, K., **Acharya A.,** Chatterjee, S., Subeesh, M.P. and Athulya, R.,*Atmospheric and Solar-Terrestrial Physics,* 231, p.105869. https://doi.org/10.1016/j.jastp.2022.105869. **(IF: 2.1).**

15. **Fernandes** *et. al.,* "Comparing recent changes in the Arctic and the Third Pole: linking science and policy. **(IF: 2.1).**

16. S.K. Baliarsingh, S. Sahoo**, Asutosh Acharya,** H.B. Dalabehera, K.C. Sahu & Aneesh A. Lotliker (**2014)** Oil Pollution in Chilika Lagoon: An Anthropogenic Threat to Biodiversity. *Current Science*. **(IF:1.1).**

Research Publications (Under Preparation/minor revision)

1. **A. Asutosh** and Simone Tilmes (2023), South Asian Summer Monsoon under stratospheric aerosol intervention. (R1 npj Climate and Atmospheric Science - Nature).

Journal Reviewer

- Environmental Research Letter
- Environmental Research
- Science of the Total Environment
- JGR-Atmosphere
- Environmental Modelling and Software
- Nature Scientific Reports
- Pure and Applied Geophysics

National Fellowships

1. Selected as a Summer Research Fellow by Indian Academy of Sciences and completed project work under the guidance of Prof. P.N. Vinayachandan, CAOS, IISC, Bangalore on the topic "The variability of surface wind over Indian ocean during the summer Monsoon". [May- July 2012].
2. Selected as a Summer Research fellow by Indian Academy of Sciences and completed a project work under the guidance of Dr. S.S.C. Shenoi, Director, INCOIS, Hyderabad on the topic "The coastal currents off the east coast of India observed using a pair of High Frequency Radar." [May -July 2011].

Merit, Scholarships and Awards

1. Best poster award for research: STIPMEX, IITM Pune (2024).
2. Best poster award for Research: Tropmet, Bhubaneswar (2016).
3. Recipient of prestigious postdoctoral research fellowship from National Center for Atmospheric Research, Boulder, USA.
4. Qualified **UGC-CSIR NET/JRF** (National level) for Earth, Atmosphere and Planetary Sciences category (conducted jointly by University Grants Commission and Council for Scientific and Industrial Research's National Eligibility Test for Lectureship and Junior Research Fellowship) 2017 **(All India Ranking 90).**
5. Recipient of NCAR early career award of $2000 to attend AGU 2023 conference.
6. Recipient of travel support to attend Gordon research conference on Climate Engineering (2024).
7. First-class first position in the Department of Physics, Government College, Angul Odisha, for 2010.
8. The first class first position (**Gold Medalist**) in M.Sc. (Oceanography) in the Department of Marine Sciences, Berhampur University for the academic session year 2010-2012.
9. P.G Merit Scholarship for 2010-12, by Dept. of Higher Education Govt. of Odisha (DHE-Odisha).
10. Recipient of prestigious Udayaraga Samman by Timepass publication Bhubaneswar for story writing (Odia).
11. Recipient of Young Author Award– 2018 by Pen In publication Bhubaneswar.

Training (India)

1. Completed online certification course on "Applied Machine Learning, AI & Its Applications using Python" in certified by E-Cell IIT Hyderabad from 1st-13th June 2021.
2. Completed faculty development programme on "Machine learning and AI using python" conducted by E&ICT Academy IIT Roorkee from 27 April to 6th May2020.
3. Completed workshop cum Training Programme on Introduction to Numerical Weather Prediction conducted by the Indian Institute of Remote Sensing (IIRS).
4. Completed basic course on "Remote Sensing, Geographical Information System &Global Navigation System" conducted by Indian Institute of Remote Sensing (IIRS) from August 10 to November 27, 2015.
5. Participated in Winter school on "Atmospheric Aerosol Physics, Measurements and Sampling Techniques" at Indian Institute of Technology Madras, Chennai during 13-16 January 2014.
6. Participated in "Training program on Ecosystem modelling" held at ICMAM, Chennai, India. [19.7.2013-23.7.2013].
7. "Post Graduate Diploma in Computer Application" at NICET, Bhubaneswar, Odisha [2010]
8. Participated in "Pre –Conference Tutorial of Pan Ocean Remote Sensing Conference (PORSEC- 2012)" held at Kochi, Kerala, India. [30.10.2012-3.11.2012].
9. Participated in Winter school on " The Arctic Ocean: atmosphere, ice and ocean interactions implications for future climate and human activities" at NCPOR, Goa, India from 28th October– 2nd November 2018.

Training (Abroad)

10. Participated in Community Earth System Model (CESM) model tutorial held at Boulder, Colorado from July 10-14 2023.
11. Participated in ERCA (European Research Course on Atmosphere) from Jan-11 to Feb-9 2017 held at Grenoble, France.
12. Participated in COSPAR Symposium and training form 4-15 November 2013 held at Thailand Bangkok.

Workshops

1. Attended one day workshop on NICES and its Data products jointly conducted by NRSC (ISRO) and CSIR-IMMT at Bhubaneswar on 6th April, 2018.
2. Attended a five days National Workshop on "Satellite Altimetry and Instrumentation for Oceanography" at IIT, Bhubaneswar. [12-16, January 2016].
3. Attended two days National Workshop on "Environmental and climate modeling" at SRM University, Chennai. [20-21, January 2012].
4. Attended five days International Workshop on "Cloud Dynamics, Micro physics, and Small-Scale Simulation at Indian Institute of Tropical Meteorology, Pune.

Certificate courses

1. Completed certification on "Introduction to ESG and Climate Change Risk" from TÜV SÜD.
2. Completed certificate course on "Certified Corporate Net Zero Standards Expert (CCNZSE)" from Udemy.
3. Completed certificate course on "Key Climate Agreements & Guidance for Policymakers" from Udemy.
4. Completed certificate course on "Demystifying Climate Change and Sustainability Data for Communication in the 21st Century" organised by Centre for Science and Environment [March 28 to April 11, 2023]
5. Completed certificate course on "Introduction to ESG" issued by Corporate Finance Institute.
6. Completed "Nine weeks schools of climate change- 2021" organized by Oxford Climate Society.
7. Completed certificate course on "Specialized module on Human health and climate change" hosted by UNITAR and World Health Organizations.
8. Certificate course on "Foundations of Meteorological Instrumentation and Measurements" produced by COMET, UCAR.
9. Certificate course on "Introduction to Meteorological Charting" produced by COMET.
10. Certificate course on "Introduction to Statistics for Climatology" produced by COMET, UCAR
11. Certificate course on "Weather Model Fundamentals" produced by COMET, UCAR.
12. Certificate course on "Satellite Monitoring of Atmospheric Composition" produced by COMET, UCAR.

Seminar/ Conference/Symposium

1. **A.Asutosh** and S. Tilmis (2024), South Asian Summer monsoon precipitation under stratospheric aerosol intervention, STIPMEX, June 1-7, Pune, India.
2. **A.Asutosh** and S. Tilmis (2023), Processes controlling the reduction in South Asian Summer monsoon precipitation under stratospheric aerosol intervention. AGU fall meeting, Dec 11-15, San Francisco, USA.
3. **A.Asutosh** and S. Tilmis (2023), South Asian Summer Monsoon under Stratospheric Aerosol Intervention, Earth Radiation Budget meeting, Nov. 6-8, 2023, NCAR, Boulder, USA.
4. **A.Asutosh,** V. Vinoj, S. Tilmis (2023), Impact of regional carbonaceous aerosols on the global monsoon area and precipitation, CESM Workshop 2023, Jun. 12-14, 2023,NCAR, Boulder, USA.
5. **A. Asutosh**, M.Nuncio, Tripathy S.C,S.Fadnavis (2019), Evaluation of Arctic Amplification in a coupled chemistry-climate model, National Conference on Polar Sciences (NCPS- 2019), August 20-22, NCPOR, GOA.
6. V. Vinoj, **A. Asutosh** and S. K. Pandey (2019), The changes to dust aerosol loading over the Indian region and its impact on monsoon rainfall, AMOS-ICTMO, AMOS Annual Meeting 2019 and the International Conference on Tropical Meteorology and

Oceanography, Darwin Convention Centre, AUSTRALIA.

7. V. Vinoj, S. Pandey and **A. Asutosh** (2019), Current understanding of dust aerosols and the Indian summer monsoon rainfall over the Indian region, International Workshop on Chemistry-Climate Interactions, 12th to 15th March 2019, Indian Institute of Tropical Meteorology, Pune, INDIA
8. V. Vinoj, S. Pandey and **A. Asutosh** (2019), Aerosols and their climate effect over the Indian region, National Conference on Severe Weather, The University of Calcutta, 17th to 20th March 2019, Kolkota, INDIA.
9. V. Vinoj, S. Pandey and **A. Asutosh** (2019), Aerosols and the Indian Monsoon Rainfall, National Space Science Symposium, 29th to 31st January 2019, Savitri Phule Pune University, Pune, INDIA
10. M.Nuncio, **A. Asutosh**, M.Mohan (2019).The Arctic atmospheric circulation in recent years implications for transport of pollutants, submitted for the invited talk at MG University Kerala.
11. V.Vinoj, **A. Asutosh**, S.K.Pandey (2018). Simulation of changing Dust loading over Indian Region using a Regional Climate Model, submitted to National Space physics symposium (NSSS) Pune,29-31 Jan 2019.
12. V. Vinoj, T. Mukherjee, **A. Asutosh**, S. K. Pandey, A. Panwar, L. Yang, and P. P. Gogoi (2017), Increasing potential for Air Pollution over Megacity New Delhi, Workshop & Science-Policy Dialogue Air pollution, Climate, and Health in Southern Asia and the Hindukush Himalaya, ICIMOD, Kathmandu, NEPAL.
13. V. Vinoj and **A. Asutosh**, 2016, Local and remote effects of carbonaceous aerosols on Indian summer rainfall, 2nd LORRI Workshop, Divecha Centre for Climate Change, Indian Institute of Science, Bangalore, INDIA
14. Participated and presented a poster titled "Response of Indian Monsoon precipitation to local and remote carbonaceous aerosols." in 'National Symposium on Tropical Meteorology: Climate Change and coastal vulnerability" (TROPMET-2016) 18-21,2016, Bhubaneswar, Odisha.
15. Participated and presented a poster titled "Estimation of Aerosol Radiative Forcing over Bay of Bengal" in Indo-German workshop on "Challenges and Opportunity in Air Pollution and Climate Change-2" (CHOP-C2). [23-25.1.2013]
16. Participated in a symposium on "Bridging the gap between earth and life sciences" at IISC Bangalore. [12.7.2012].
17. Participated and presented a paper titled "LIDAR based atmospheric study" in an international seminar on "Frontiers of Atmospheric Physics and Technology" organized by Dept. of Physics, Swami Yogi -Vemmana University. [1-2.3.2012].

Media highlights

1. Act and Inspire: The times of India, Bhubaneswar, Friday, May 5, 2020
2. Evaluation of Pre-monsoon Dust Aerosol Dynamics over South Asia: The IIOE-2 Newsletter, volume 6, Issue 6, June 2022.

Extra-Curricular Activities

- Public Speaking Skills
- Certified Yoga and Meditation Teacher
- Leadership Quality
- Social Work
- Literature and content writing (Published in National/ State magazines and Newspapers)
- My Poetry collection (https://www.amazon.in/dp/8195123252/ref=tsm_1_fb_lk)

References

1. Dr. Vinoj V
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School of Earth, Ocean and Climate Sciences, Indian Institute of Technology (IIT), Bhubaneswar
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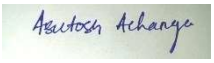
2. Dr. Simone Tilmes
Senior Scientist (ACOM)
National Center for Atmospheric Research
Boulder CO 80307-3000, USA
Email: tilmes@ucar.edu

Declaration

I solemnly declare that the above information is correct to the best of my knowledge and belief.

Place: Bhubaneswar, India

Sep 2024



(Asutosh Acharya