

POPAT U. SALUNKE

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Educational Information

Ph. D. Atmospheric Science (**Thesis Submitted**)
Centre for Atmospheric Sciences,
Indian Institute of Technology Delhi, India
Title: Changing Climate of the Himalaya-Tibetan Highland and its Association with the Climate of India

M. Tech. Atmospheric Science (**June 2012**)
University of Pune & Indian Institute of Tropical Meteorology, Pune, India

M. Sc. Physics (**June 2009**)
University of Pune, India

B. Sc. Physics (**June 2007**)
University of Pune, India

Research Interest

Climate Modeling, Climate Data Analysis and Application, Climate Change and Climate Extreme, Atmospheric Dynamics, Dynamics of Indian Monsoon, Geoengineering, Statistical Analysis

Research Experience

Research Associate (Feb 2021 - present)
DST Centre of Excellence in Climate Modeling
Centre for Atmospheric Sciences,
Indian Institute of Technology Delhi, India
Advisor: Dr. S. K. Mishra
Title: Data Analysis and Climate Simulation

Visiting Research Student (Jul 2019 - Sept 2019)
King Abdullah University of Science and Technology, Thuwal, Saudi Arabia
Advisor: Prof. Ibrahim Hoteit
Title: Projecting Future Climate of the Kingdom of Saudi Arabia and Adjoining Regions

Senior Research Fellow (Feb 2014 - July 2014)
Centre for Atmospheric Sciences, Indian Institute of Technology Delhi, New Delhi, India
Advisor: Dr. Sagnik Dey

Title: Impact of Air Quality and Heat Stress on Health: Future Projections for India

Project Assistant (Jul 2013 - Feb 2014)
Centre for Atmospheric Sciences, Indian Institute of Technology Delhi, New Delhi, India
Advisor: Prof. S. K. Dash
Title: Asian Cities Adapt: Impacts of Climate Change in Target Cities in India and the Philippines and Local Adaptation Strategies

Junior Research Fellow (Jan 2013 - Mar 2013)
Department of Space and Atmospheric Sciences, University of Pune, Pune, India
Advisor: Dr. A. K. Karipot
Title: Calibration and Validation of Land Surface Model by using INSAT-3D Observations and In Situ Measurements

M. Tech. Dissertation (Jun 2011 - May 2012)
Indian Institute of Tropical Meteorology, Pune,
Advisor: Dr. M. N. Patil (Scientist E)
Title: Variability of Fluxes in Atmospheric Boundary Layer by Using Micrometeorological Tower

Computer Proficiency

Operating systems: Linux, Mac, Windows, HPC
Software's: NCAR command language (NCL), MATLAB, Origin, CDO, NCO, Python (Learning)
Languages known: Fortran90, Shell Scripting
Numerical Modeling: NCAR CESM1-CAM5, RegCM4

Professional Awards and Honours

- Research Excellence Travel Award (RETA) from IRD (IIT Delhi) (**2019**)
- CSIR Travel Grant (*Not Availd*) (**2019**)
- Research Fellowship, Indian Institute of Technology Delhi (**Jul 2014 - Jul 2019**)
- Student Travel Grant and Scholarship AGU Fall Meeting 2017 (*Not Availd*) (**2017**)
- Research Fellowship, Indian Institute of Tropical Meteorology (**2010 - May 2012**)

Professional Memberships

American Geophysical Union **2017- Present**

European Geosciences Union **2019- Present**

Member - Science Working Group, Young Earth System Scientists (YESS) Community

Teaching Assistant

(**Responsibility:** Proctor of minors and major exam, Evaluation of answer sheets, ~~Grading exams~~, ~~Duties including~~ climate modeling lab, Conduct tutorials and labs)

- Climate Modeling (**Sep - Jan 2020**)
- The Earth's Atmosphere: Physical Principles (**Jul 2017 - Jul 2019**)
- Tropical Weather and Climate (**Jan 2016 - May 2017**)
- Numerical Modeling of the Atmospheric and Oceanic Phenomena (**Jul 2015 - Dec 2015**)

Publications

Refereed Journals

1. Mishra S. K., S. Jain, A. Anand, **P. Salunke**, and J. T. Fasullo: Historical and Projected Low-Frequency Variability in the Somali Jet and Indian Summer Monsoon. *Climate Dynamics*, 56, 749-765, 2021. DOI:10.1007/s00382-020-05492-z (IF: 4.4)
2. Bal P. K., H. R. Dasari, N. Prasad, **P. Salunke**, and R. S. Parihar: Variations of Energy Fluxes with ENSO, IOD and ISV of Indian Summer Monsoon Rainfall over the Indian Monsoon Region. *Atmospheric Research*, Volume 258, 2021. DOI: 10.1016/j.atmosres.2021.105645 (IF: 5.4)
3. Bhowmick M., S. K. Mishra, B. Kravitz, S. Sahany, and **P. Salunke**: Response of the Indian Summer Monsoon to Global Warming, Solar Geoengineering and its Termination, *Scientific Reports*, 11, 9791, 2021. DOI: 10.1038/s41598-021-89249-6 (IF: 4.4)
4. **Salunke P.**, S. Jain, and S. K. Mishra: Performance of the CMIP5 models in the simulation of the Himalaya-Tibetan Plateau monsoon, *Theoretical and Applied Climatology*, 137, 909-928, 2019. DOI:10.1007/s00704-018-2644-9 (IF: 3.2)
5. Jain S., **P. Salunke**, S. K. Mishra, and S. Sahany: Advantage of NEX-GDDP over CMIP5 and CORDEX Data: Indian summer Monsoon, *Atmospheric Research*, Volume 228, 152-160, 2019. (IF: 5.4)
6. Mishra S. K., S. Jain, **P. Salunke**, and S. Sahany: Past and Future Climate Change over the Himalaya-Tibetan Highland-Inferences from APHRODITE and NEX-GDDP

DATA, *Climatic Change*, 156,315-322, 2019. DOI: 10.1007/s10584-019-02473-y (IF: 4.7)

7. Zebaze S., S. Jain, **P. Salunke**, S. Shafiq and S. K. Mishra: Assessment of CMIP5 multimodel mean for the historical climate of Africa, *Atmospheric Science Letters*, 20,1-12, 2019. DOI: 10.1002/asl.926 (IF: 2.4)

8. Parihar Singh R., P. K. Bal, V. Kumar, S. K. Mishra, S. Sahany, **P. Salunke**, S. K. Dash and R. Dhiman: Numerical Modeling of the Dynamics of Malaria Transmission in a Highly Endemic Region of India, *Scientific Reports* 9(1): 11903. 2019. DOI:10.1038/s41598-019-47212-6 (IF: 4.4)

9. Mishra, S. K., S. Sahany, **P. Salunke**, In-Sik Kang, and S. Jain: Fidelity of CMIP5 Multi Model Mean in Assessing Indian Monsoon Simulations. *npj Climate and Atmospheric Sciences*, 1, Article number 39, 2018. DOI: 10.1038/s41612-018-0049-1 (IF: 8.8)

10. Jain S., **P. Salunke**, S. K. Mishra, and S. Sahany: Performance of CMIP5 models in the simulation of Indian summer monsoon, *Theoretical and Applied Climatology*, 137,1429-1447, 2019. (IF: 3.2)

11. Jain S., S. K. Mishra, **P. Salunke**, and S. Sahany: Importance of the Resolution of Surface Topography Vis-à-Vis Atmospheric and Surface Processes in the Simulation of the Climate of Himalaya-Tibet Highland. *Climate Dynamics*, 52,4735-4748, 2019. DOI:10.1007/s00382-018-4411-0 (IF: 4.4)

12. Sahany S., S. K. Mishra, and **P. Salunke**: Historical Simulations and Climate Change Projections over India by NCAR CCSM4: CMIP5 vs. NEX-GDDP. *Theoretical and Applied Climatology*, 135,1423-1433, 2019. DOI:10.1007/s00704-018-2455-z (IF: 3.2)

13. Mishra S. K., S. Sahany, and **P. Salunke**: CMIP5 vs. CORDEX over the Indian region: how much do we benefit from dynamical downscaling? *Theoretical and Applied Climatology*, Volume 133, Issue 3-4, pp 1133-1141, 2017. DOI:10.1007/s00704-017-2237-z (IF: 3.2)

14. Mishra S. K., S. Sahany, and **P. Salunke**: Linkages between MJO and summer monsoon rainfall over India and surrounding region. *Meteorology and Atmospheric Physics*, Volume 129, pp 283-296, 2017. DOI:10.1007/s00703-016-0470-0 (IF: 2.1)

15. Dash S. K., S. Dey, **P. Salunke**, M. Dalal, V. Saraswat, S. Chowdhury, R. K. Choudhary: Comparative Study of Heat Indices in India Based on Observed and model Simulated Data. *Current World Environment*, 12(3), 2017. DOI:10.12944/CWE.12.3.06

Manuscripts in Submitted

1. Tiwari K., S. K. Mishra, **P. Salunke**, Hisashi Ozawa and A. Dewan: Potential Effects of the Projected Antarctic

Sea-Ice Loss on the Climate System. *Climate Dynamics*, 2021.

2. Tiwari K., S. K. Mishra, **P. Salunke**, and A. Dewan: Future Projections of Temperature and Precipitation for Antarctica. *Environmental Research Letters*, 2021.

3. Parihar R. S., H. R. Dasari, V. Kumar, **P. Salunke**, S. Langodan, A. Anand, S. Sahany, S. K. Mishra, and I. Hoteit: Transmission Dynamics of Malaria in the Kingdom of Saudi Arabia using the VECTRI Model, *GeoHealth*, 2021.

Manuscripts in Preparation

1. **Salunke P.** and S. K. Mishra: Numerical Simulations of Orographic Effects on Tropical Easterly Jet and Indian summer Monsoon (*In Process*)

2. **Salunke P.** and S. K. Mishra: Past and Future of Tropical Easterly Jet and its association with Indian Summer Monsoon (*to be submitted*)

3. **Salunke P.**, S. K. Mishra and C. P. Abdulla: Association of the Climate Change of Himalaya-Tibetan Highland and Indian Summer Monsoon (*to be submitted*)

4. **Salunke P.** and S. K. Mishra: Response of the Climate of Himalaya-Tibetan Highland to Geoengineering of Solar Radiation (*to be submitted*)

5. **Salunke P.**, S. K. Mishra, and A. Saini: Orographic effects of the Himalaya-Tibetan Highland on Somali Jet, Tropical Easterly Jet, summer monsoon Rainfall. (*to be submitted*)

6. **Salunke P.**, S. K. Mishra, and N. Prasad: Comparing of CMIP6 and CMIP5 precipitation in the Indian summer monsoon (*In Process*)

Workshop/Training Attended

1. Workshop **2021**, Recent Advances in AI and ML for Climate Sciences organized by Technology Innovation Hub, Indian Statistical Institute (ISI), Kolkata, India. (*Virtual Mode*)

2. Global Initiative of Academic Network's (GIAN) **2019**, Tropical Meteorology Asian-Australian Monsoon Tropical Cyclones and Climate Change, short term course, IIT Delhi, New Delhi, India.

2. WILEY **2018**, Author Workshop on How to Publish a Technical Paper, IIT Delhi, New Delhi, India.

3. Workshop **2014**, Climate Modelling: Simulation and Analysis, Centre for Atmospheric Sciences, IIT Delhi, New Delhi, India

4. Workshop **2013**, Climate Change and Health, Sri Ramachandra University, Porur, Chennai, India.

5. Raman Memorial Conference **2013**, Department of Physics, University of Pune, Pune, India.

Contributed Presentations / Abstracts

1. **Salunke P.**, S. K. Mishra, and A. Anand, "Impact of the Himalayan-Tibetan Highland Orography on Somali Jet Popat U. Salunke (Curriculum Vitae)

and Tropical Easterly Jet and the Indian Summer Monsoon"; Virtual Poster presentation at American Geophysical Union (AGU) Fall Meeting, 2020.

2. **Salunke P.**, and S. K. Mishra, "Past and Future of Tropical Easterly Jet and its association with Indian Summer Monsoon"; Poster presentation at European Geophysical Union (EGU) General Assembly 2019, Austria International Centre, Vienna, Austria, 2019.

3. **Salunke P.**, S. Jain, et al., "Evaluation of CMIP5 Models for Indian Summer-Monsoon Precipitation and Temperature"; Oral presentation at TROPMET 2018, Banaras Hindu University, Varanasi, Uttar Pradesh, India.

4. Singh R., **Salunke P.**, Bal P. K, et al., "Analysis of Potential Effects of Climate Change on Malaria Transmission Dynamics in Odisha, India"; Poster presentation at TROPMET 2018, Banaras Hindu University, Varanasi, Uttar Pradesh, India, 2018.

5. Singh R., **Salunke P.**, et al., "Response of Climatic Conditions and Human Health over India to Geo engineering (G3)"; Poster presentation at Eighth Annual GeoMIP Meeting, at ETH Zurich, Switzerland, 2018.

6. Jain S., S. K. Mishra, **Salunke P.**, and Sahany S., "Importance of the Resolution of Surface Topography Vis-à-Vis Atmospheric and Surface Processes in the Simulation of the Climate of Himalaya-Tibet Plateau"; Oral presentation at TROPMET 2018, Banaras Hindu University, Varanasi, Uttar Pradesh, India, 2018.

7. Bhowmick M., Mishra S. K., **Salunke P.**, Chakraborty M., "Indian Monsoon in the Geoengineered world (G2) and after its Termination"; Oral presentation at Eighth Annual GeoMIP Meeting, at ETH Zurich, Switzerland, 2018.

8. Mishra S. K., Sahany S., **Salunke P.**, "SRM Research in India: Future Prospects"; Oral presentation at SRMGI Global Forum at Berlin Germany, 2017.

9. Mishra S. K., Sahany S., **Salunke P.**, "SRM Research in India"; Oral presentation at SRMGI Global Forum at Berlin Germany, 2017.

10. Mishra S. K., Sahany S., Dash S. K., Anand A., Pathak R., and **Salunke P.**, "Need for Reliable Simulations of Indian Climate: Climate Projections to Climate Engineering"; Oral presentation at ICTP, Italy, 2017.

11. Pathak R., Sahany S., Mishra S. K., Gupta K., **Salunke P.**, Anand A., "CMIP5 vs CORDEX in the Context of Indian Monsoon"; Poster presentation at 13th Annual Meeting of the Asia Oceania Geosciences Society, Beijing, China, 2016.

12. Mishra S. K., **Salunke P.**, Sahany S., and Dash S. K., "Climate Change and Climate Variability in India: Reliability of Present-day Models"; Oral presentation at International Conference on Climate change and Adaptation: Empowering small holders and ensuring food security, Chennai, India, 2016.

References

1. Dr. Saroj Kanta Mishra

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