

Sandhya Jose

✉ sandhya.kalluvilayil@gmail.com | 🌐 Webpage | 🎓 Google Scholar | ☎ +91-8860479716

Research Interests

- **Cloud Physics** : Cloud micro-physical processes, Aerosol-Cloud Interactions
- **Aerosol Physics** : Aerosol Physical and Chemical Characteristics , Aerosol optical properties and Radiative Forcing
- **Climate Change Policy**: Energy and Climate Policy, Climate Politics, Sustainable Development

Education

- **National Physical Laboratory** August 2016 - May 2022
PhD in Atmospheric Sciences
Research Topic: *Study on aerosol cloud radiation interactions using ground based and satellite observations*
Research Advisor: Dr. Sachchidanand Singh
- **University of Hyderabad** August 2013 - July 2015
Center for Earth and Space Sciences
M.Sc. in Ocean and Atmospheric Sciences
First rank in the M.Sc. batch, 2015
- **University of Kerala** June 2010 - May 2013
B.Sc. in Physics
CGPA: 3.47/4

Employment

- **Project Scientist- II** October-2023 - Present
India Meteorological Department (IMD), Pune, India
Climate and Research Services Division
Climate Monitoring and Prediction Group (CMPG)
Project: *Monsoon Mission-III*
- **Project Research Assistant** January 2016 - July 2016
Physical Research Laboratory (PRL), Ahmedabad, India
Space and Atmospheric Sciences Division
Project: *Measurements and Estimates of Aerosol Radiative Effects*

Journal Publications

- J5.** Sandhya Jose, O.P Sreejith, B.P.Patkar, C.N. Shaligram, K Amar Jyothi and A.K.Mitra, “Assessment of the IMD+ GPM-IMERG Merged Dataset over South Asia for the period 2001–2020”, (Under Preparation)
- J4.** Sandhya Jose, Amit Kumar Mishra, Neelesh.K.Lodhi, Sudhir Kumar Sharma, Sachchidanand Singh, “Characteristics of aerosol size distributions and new particle formation events at Delhi: an urban location in the Indo-Gangetic Plains”, *Frontiers in Earth Sciences*, December, 2021
- J3.** Mathew Sebastian, Kompalli S. K, Kumar A. V, **Sandhya Jose**, Babu S. S, Pandithurai, Singh. S, Hooda. R. K, Soni V. K, Pierce J. R, Vakkari V, Asmi E, Westervelt D. M, Hyvärinen A.P, and Kanawade V. P: “Observations of particle number size distributions and new particle formation in six Indian locations”, *Atmospheric Chemistry and Physics*, April, 2022.

- J2.** Sandhya Jose, Amit Kumar Mishra, Sachchidanand Singh. "A correlational study on size differentiated aerosols on monsoonal and pre-monsoonal cloud properties over the Indo Gangetic Basin", *Atmospheric Research*, August, 2021.
- J1.** Sachchidanand Singh, Neelesh K Lodhi, Amit Kumar Mishra, **Sandhya Jose**, S. Naresh Kumar and R.K. Kotnala. "Assessment of satellite-retrieved surface UV-A and UV-B radiation by comparison with ground-measurements and trends over Mega-city Delhi", *Atmospheric Environment*, June, 2018.

Book Chapters

- B1.** Sachchidanand Singh, Amit Kumar Mishra, **Sandhya Jose**, Neelesh K Lodhi. Atmospheric Pollution and Solar Ultraviolet Radiation in Asia: In Asian Atmospheric Pollution, ISBN: 9780128166932, Elsevier, August 2021

Conference Proceedings

- P1.** **Sandhya Jose**, Amit Kumar Mishra, Sachchidanand Singh, "Aerosol Size Resolved Study on Cloud Radiative Forcing Over the Indo Gangetic Plain", *Proceedings of the 18th Annual Meeting of the Asia Oceania Geosciences Society (AOGS 2021)*, April, 2022

Conferences

- C11.** **Sandhya Jose**, O.P. Sreejith, B.P. Patkar, C.N. Shaligram, Aiswarya R, K Amar Jyothi, and A.K. Mitra, "Assessment of the IMD+ GPM-IMERG Merged Dataset and Analysis of Extreme Precipitation events in South Asia for the period 2001–2020", TROPMET, December, 2024
- C10.** Mathew Sebastian, Kompalli S. K, Kumar A. V, **Sandhya Jose**, Babu S. S, Pandithurai, Singh. S, Hooda. R. K, Soni V. K, Pierce J. R, Vakkari V, Asmi E, Westervelt D. M, Hyvärinen A.P, and Kanawade V. P, "Characterization of particle number size distributions and new particle formation in different Indian locations" *European Geophysics Union General Assembly*, Vienna, Austria & Online, May, 2022
- C9.** **Sandhya Jose**, Amit Kumar Mishra and S.Singh, "Study on influence of aerosol particle size on cloud properties using satellite retrieved data", *International Conference on Cloud Physics*, IITM-Pune, August 2021.
- C8.** **Sandhya Jose**, Amit Kumar Mishra and S.Singh, "Aerosol Size Resolved Study on Cloud Radiative Forcing Over the Indo Gangetic Plain", *Asia Oceania Geo-sciences Society*, Singapore, August 2021.
- C7.** **Sandhya Jose** and S.Singh, "Study on Aerosol Cloud Radiation Interaction using satellite and ground based observations", *DST-INSPIRE Review Meet*, Chandigarh, India, September, 2019
- C6.** Prerita Agarwal, Alaa Mahwish, **Sandhya Jose** and S.Singh, "Spatial and temporal assessment of absorbing aerosol over South Asia using satellite and ground based observations", *São Paulo School of Advanced Science (SPSAS) on Atmospheric Aerosols*, Sao Paulo, Brazil, July 2019
- C5.** **Sandhya Jose** and S. Singh, "Study on seasonal characteristics of Aerosol Size Distribution at an urban location in Indo Gangetic Plain", *European Research Course on Atmospheres- 2019*, Grenoble, France, January, 2019
- C4.** **Sandhya Jose**, Humaira Ghayas, A.K. Mishra, A. Kumar, S. Chandra and S. Singh. "Comparative study of Aerosol Size Distribution during Summer and Winter season and Observation of New Particle Formation events at Delhi", *Indian Aerosol Science and Technology Association Conference*, Delhi, India, November, 2018.
- C3.** S. Singh, **Sandhya Jose**, A.K. Mishra, and Neleesh K.Lodhi. "Effect of Atmospheric Aerosols on Solar UV Radiation", *Indian Aerosol Science and Technology Association Conference*, Delhi, India, November, 2018.
- C2.** **Sandhya Jose**, A.K. Srivastava, A.K. Mishra, A. Kumar, S. Chandra and S. Singh. "Optical Properties of aerosols over Delhi during clear, hazy, foggy and dusty conditions and associated aerosol direct radiative forcing", *Indian Aerosol Science and Technology Association Conference*, Ahmedabad, India, December, 2016.

- C1. S. Singh, A. K. Mishra, A. Kumar, S. Chandra, and **Sandhya Jose**. “Forest fires and aerosol radiative forcing over Himalayan region”, *Indian Aerosol Science and Technology Association Conference*, Ahmedabad, India, December, 2016.

Research Projects

- Project Title : *Measurements and Estimates of Aerosol Radiative Effects*
Research Advisor: Prof. S. Ramachandran
Physical Research Laboratory, Ahmedabad.
- M.Sc. Dissertation: *Inter-Continental Transport of Pollution from India During Summer and Winter Monsoon*
Advisor: Prof. Sachin Ghude
Indian Institute of Tropical Meteorology (IITM), Pune.
- M.Sc. Summer Project: *Analysis of Cloud Properties from Aircraft Observation Data*
Advisor: Prof. G.S.Bhat
Indian Institute of Science (I.I.Sc.), Bangalore.
- M.Sc. Field Project: *Observational Techniques in Oceanography*

Expertise

- Modelling Platforms: WRF-Chem (Basic), Hysplit
- Programming Languages: MATLAB, Python, Fortran
- Climate Data Tools: Grads, CDO, ERDAS IMAGINE
- Softwares: Octave, Plot Digitizer, LaTeX
- Data Handled: Sun Photometer, GRIMM-WRAS, Aethalometer (AE33), UV-Radiometer
- Instruments Handled: GRIMM-WRAS, Aethalometer (AE33), Multi-Wavelength Radiometer (MWR), Pyranometer, Pyrgeometer, UV-Radiometers
- Platforms : GNU/LINUX, Windows
- Languages: Malayalam (Native), English (Fluent), Hindi (Fluent), French (Elementary)

Awards and Fellowships

- Gold medal for securing the first rank in M.Sc. 2015 batch
- Department of Science and Technology (DST) INSPIRE fellowship for pursuing research in a leading institute for the period of December 2016-December 2021
- Indian Academy of Sciences (IAS) fellowship for the period of May 2014-July 2014

Workshops Attended

- National Training Workshop on *Climatic Impacts of Carbonaceous Aerosols and Modeling (NT-CCAM-2)* organised by Indian Institute of Tropical Meteorology, Pune, June, 2024.
- Annual Monsoon Workshop and Heatwave Symposium on *Understanding the science of heatwaves under the warming scenario and challenges ahead* organised by Indian Meteorological Society-Pune Chapter, Pune, March, 2024
- WRF Training Workshop organised by Indian Institute of Tropical Meteorology, Pune, March 2024
- Capacity building training programme on *Seasonal Prediction to Operational Services in South Asia* , organised by Ministry of Earth Sciences, Government of India and Department of Meteorology-Srilanka, Pune, December, 2023
- Early Career Networking Workshop organised by *International Global Atmospheric Chemistry (IGAC)* , Virtual, September 2021.
- International Workshop on *ICTP Regional Climate model application over South Asia CORDEX Domain* organised by Dibrugarh University, Assam, February, 2021.
- Winter School titled *European Research Course on Atmospheres (ERCA-2019)*, at University of Grenoble and Observatoire de Haute Province, France, January 2019.

- International Workshop on *Cloud Dynamics, Micro Physics and Small Scale Simulation* at Indian Institute of Tropical Meteorology (IITM), Pune, August 2018.
- Workshop on *Atmospheric Aerosol Physics, Measurements, and Sampling Techniques* at National Institute of Oceanography (NIO), Goa, February, 2018.
- Workshop and training program in relation with *Aethelometer Inter-Comparison Experiment* at Indian Institute of Science (IISc), Bangalore, April, 2017.
- Training Program on *Ocean Data Utilization and Ocean Observation System* at Indian National Center for Ocean Information Studies (INCOIS), December, 2015.
- Workshop on *Ocean Informatics* at Indian National Center for Ocean Information Studies (INCOIS), February, 2014,
- Workshop on *Scientific Ballooning in Meteorology* at Tata Institute of Fundamental Research (TIFR) Balloon Facility, November, 2013.

Services

- Volunteer at the Annual Monsoon Workshop and National Symposium on Understanding the Science of Heatwaves, March, 2024
- Student volunteer for Asia Oceania Geo-Sciences Society (AOGS) Annual Meeting, August 2021
- Student volunteer for India International Science Festival (IISF), December 2016

Relevant Course Work

Atmospheric Chemistry	Ocean-Atmosphere Coupling
Ocean Dynamics	Remote Sensing
Geophysical Fluid Dynamics	Atmospheric Dynamics
Numerical Weather Prediction	Diagnostic Meteorology
Tropical Meteorology	Ocean Physics
Modeling of the Atmosphere and Ocean	Climate Change and its Impacts
Atmospheric Physics	Circulation of the Atmosphere and Ocean
Image Processing and Interpretation (Lab)	Model Simulation (Lab)
Climate change and Human Rights	Gender and Environment

References

Dr. Sachchidanand Singh
 Senior Principal Scientist
 CSIR-National Physical Laboratory
 New Delhi, India
 Email: ssingh@nplindia.org
 Phone No: +91-9871012398

Dr. Amit Kumar Mishra
 Assistant Professor
 Jawaharlal Nehru University
 New Delhi, India
 Email: amitmishra@mail.jnu.ac.in
 Phone No: +91-9205201653

Dr. Ashok Karumuri
 Professor
 Centre for Earth and Space Sciences
 University of Hyderabad
 Hyderabad, India
 Email: ashokkarumuri@uohyd.ac.in
 Phone No: +91-9666136967