Praveen Kumar Singh

Laboratoire de Météorologie Dynamique – IPSL, École Polytechnique, Route de Saclay, 91128, Palaiseau, France;
praveenglaciology@gmail.com; https://singhpraveenk.github.io/

EDUCATION

Ph.D. in Atmospheric Science 2018–2024	Indian Institute of Technology Roorkee, Roorkee, Uttarakhand 247667, India *Dissertation:* Black Carbon in the Hindu Kush Himalayan Region: Concentration, Sources, and Radiative Impacts
M.Sc. in Environmental Science 2014–2016	Central University of Rajasthan, Ajmer, Rajasthan 305811, India *Dissertation*: Methane emission and its variability in the different land uses of the semi-arid region
B.Tech. in Electronics & Communication Engineering 2007–2011	Gautam Buddh Technical University, Lucknow, Uttar Pradesh 226031, India

WORK EXPERIENCE

Postdoctoral Research Scientist
April 2026–Till Date

Laboratoire de Météorologie Dynamique – IPSL/CNRS, École Polytechnique, Route de Saclay, 91128, Palaiseau, France

- I am working on the interactions between atmospheric pollutants and meteorology/climate over South and Southeast Asia.

Senior Program Associate – Air Quality
May 2024–March 2026

WRI India, New Delhi 110016, India

- I worked with stakeholders from Gorakhpur's urban government on sectoral air pollution reduction strategies to curb air pollution in the city.

Senior Research Fellow
January 2021–April 2024

Indian Institute of Technology Roorkee, Roorkee, Uttarakhand 247667, India

- Worked on space-based monitoring of air pollution over the Indo-Gangetic region due to biomass burning emissions
- Set-up and simulation of regional climate and general circulation models over the supercomputer "PARAM Ganga."

SSA–Cryosphere and Atmosphere
January 2020–December 2020

International Centre for Integrated Mountain Development, Kathmandu, Nepal, GPO Box 3226

- Operation of SMART and AERONET stations in Nepal
- Analysis of the observation, satellite, and gridded datasets related to the atmosphere and cryosphere
- Radiative transfer, glacier energy balance, and glacier mass balance modeling
- Writing reports and research publications

Research Fellow
April 2018–December 2019

International Centre for Integrated Mountain Development, Kathmandu, Nepal, GPO Box 3226

- Set up and operation of SAMRT and AERONET stations in Nepal
- Analysis of the observation datasets generated from the ICIMOD stations

- Analysis of satellite and gridded data sets related to the atmosphere and cryosphere
- Writing reports and research papers

Junior Research Fellow
January 2017–March 2018

Indian Institute of Technology Roorkee, Roorkee, Uttarakhand 247667, India

- Worked on glacier-related hazards and atmospheric remote sensing in the Indian Himalayan region

Summer Intern
May–July 2015

Physical Research Laboratory, Ahmedabad, Gujarat 380009, India

- Undertook project instrumentation for dayglow photometry

Telecom Engineer
January–December 2012

Agate Infosoft Pvt. Ltd., Noida, India 201303

PROFESSIONAL DEVELOPMENT

Post Graduate Diploma in Environmental Law and Policy
March 2022

National Law University Delhi, New Delhi 110078, India

Introduction to Environmental Law and Policy
August 2020

The University of North Carolina at Chapel Hill offered through Coursera

JOURNAL PAPERS

Singh, P.K., Goswami, A., Puppala, S.P., 2025. Aerosol composition, transport, and radiative impact derived from ground-based and satellite remote sensing in the Central Himalaya. *Science of The Total Environment*, 1003, 180657.

Ranjan, R., Goswami, A., Ojha, C.S.P., Jain, S., **Singh, P.K.**, 2025. Climate change impact assessment on the river discharge of the upper Ganga Subbasin. *Phys. Chem. Earth, Parts A/B/C,* 138, 103887.

Sherpa, T. C., Matthews, T., Perry, L. B., Thapa, A., **Singh, P. K.**, Khadka, A., Koch, I., Pelto, M., Panday, P., Aryal, D., Shrestha, D., Kang, S., & Mayewski, P. A. (2023). Insights from the first winter weather observations near Mount Everest's summit. *Weather*, 1–5.

Saikia, A., Pathak, B., **Singh, P. K.**, Bhuyan, P. K., & Adhikary, B. (2023). Decadal Changes in Atmospheric Methane Emissions in the Eastern Himalayan Region: Source Apportionment and Impact Assessment. *International Journal of Environmental Research,* 17(1), 10.

Singh, P. K., Adhikary, B., Chen, X., Kang, S., Poudel, S. P., Tashi, T., Goswami, A., & Puppala, S. P. (2023). Variability of ambient black carbon concentration in the Central Himalaya and its assessment over the Hindu Kush Himalayan region. *Science of The Total Environment*, 858, 160137.

Upadhyay, A., Mahapatra, P. S., **Singh, P. K.**, Dahal, S., Pokhrel, S., Bhujel, A., Joshi, I. B., Paudel, S. P., Puppala, S. P., & Adhikary, B. (2022). Learnings from COVID-19 Forced Lockdown on Regional Air Quality and Mitigation Potential for South Asia. *Aerosol and Air Quality Research*, 22, 210376.

Srivastava, P., Namdev, P., & **Singh, P. K.** (2022). 7 February Chamoli (Uttarakhand, India) Rock-Ice Avalanche Disaster: Model-Simulated Prevailing Meteorological Conditions. *Atmosphere*, 13(2), 267.

Potocki, M., Mayewski, P. A., Matthews, T., Perry, L. B., Schwikowski, M., Tait, A. M., Korotkikh, E., Clifford, H., Kang, S., Sherpa, T. C., **Singh, P. K.**, Koch, I., & Birkel, S. (2022). Mt. Everest's highest glacier is a sentinel for accelerating ice loss. *npj Climate and Atmospheric Science*, 5(1), 7.

Clifford, H. M., Potocki, M., Koch, I., Sherpa, T., Handley, M., Korotkikh, E., Introne, D., Kaspari, S., Miner, K., Matthews, T., Perry, B., Guy, H., Gajurel, A., **Singh, P. K.**, Elvin, S., Elmore, A. C., Tait, A., & Mayewski, P. A. (2021). A case study using 2019 pre-monsoon snow and stream chemistry in the Khumbu region, Nepal. *Science of the Total Environment*, 789, 148006.

Gul, C., Mahapatra, P. S., Kang, S., **Singh, P. K.**, Wu, X., He, C., Kumar, R., Rai, M., Xu, Y., & Puppala, S. P. (2021). Black carbon concentration in the central Himalayas: impact on glacier melt and potential source contribution. *Environmental Pollution*, 116544.

Singh, P. K., Kumar, A., & Banerjee, K. (2018). Methane Emission and Its Variability in Different Land-uses of Semi-arid Region, Rajasthan. *Journal of Climate Change*, 4(2), 67–75.

BOOK CHAPTER

Srivastava, P., Namdev, P., & **Singh, P. K.** (2024). Simulation of Meteorological Conditions Using a High-resolution Model Case Study: Chamoli Rock-Ice Avalanche Event. In *Emerging Issues in Environment, Geography and Earth Science,* Vol. 9 (pp. 81–111). B P International.

INVITED TALKS

31 October 2025 Hyderabad, India	**Guest lecture** on "The Science of Climate Change and Global Warming" at the Kautilya School of Public Policy, Hyderabad, India.
26–27 September 2024 Dushanbe, Tajikistan	**Keynote speaker** at the Regional Meeting on "Understanding the Impact of Sand and Dust Storms on Glaciers in the Asia-Pacific Region: Towards Preservation and Collaboration" organized by the Asian and Pacific Centre for the Development of Disaster Information Management (APDIM), in collaboration with the Committee of Emergency Situations and Civil Defense under the Government of Tajikistan.

CONFERENCES

Attended

February 26–28, 2020	Roorkee Water Conclave 2020 focusing on "Hydrological Aspects of Climate Change" at NIH/IIT Roorkee, Roorkee, India
August 28–30, 2019	International forum on "The cryosphere and society, the voice of the Hindu Kush Himalaya" at ICIMOD Headquarters, Kathmandu, Nepal

Paper presentations

Praveen Kumar Singh, Arshini Saikia, Tenzing Chogyal Sherpa, Ajanta Goswami, Siva Praveen Puppala, 2025. Tracing black carbon's footprint on the Hindu Kush Himalaya: an assessment of emissions, deposition and albedo trends using multimodal, gridded, and satellite datasets. *The Second Inter-Polar Conference Connecting the Arctic with the Third Pole HKH - Cryosphere, People, and Climate Change* at ICIMOD, Kathmandu, Nepal. September 2-5, 2025.

Poster presentations

Praveen Kumar Singh, Ajanta Goswami, Bhupesh Adhikary, Shankar Prasad Poudel, Tshering Tashi, Siva Praveen Puppala, 2023. Variability of atmospheric black carbon concentration in two urban valleys of the Central Himalaya. *5th Atmospheric Composition and the Asian Monsoon (ACAM) workshop* at the University of Dhaka, Bangladesh. June 8-10, 2023.

Awanish Kumar, **Praveen Kr. Singh**, Sandeep Kumar, 2015. Biochar from agro-waste and its carbon sequestration potential. *National Conference on Climate Change: Emerging Issues and Mitigation Strategies* at BBA (Central) University, Lucknow, Uttar Pradesh, India. November 23–24. SLPP–17.

Praveen Kr. Singh, Awanish Kumar, Sandeep Kumar, 2015. Vilayati khejra (Prosopis juliflora) biomass-based biochar: A potential fertilizer for (Ajmer) semi-arid region. *4th Annual International Convention on Climate Change and Water (C3W)* at Suresh Gyan Vihar University, Jaipur, Rajasthan, India. October 16–17. pp–31.

WORKSHOPS/ TRAINING PROGRAMS

Attended

June 6–7, 2023	*5th Atmospheric Composition and the Asian Monsoon (ACAM) training school* focused on "Using satellite observations and modeling of atmospheric chemistry and aerosols in the Asian monsoon region for research and application" at the University of Dhaka, Bangladesh.
August 25, 2020	Virtual training program on *"Introduction and demo: JAMS modeling system"* conducted by ITB, Indonesia, and GIScience Group, Friedrich-Schiller University of Jena, Germany.
August 19–21, 2020	A virtual training program on "black carbon monitoring instrument maintenance and application" was conducted by ICIMOD, Nepal, and Aerosol d.o.o., Slovenia.
February 14, 2020	One–day workshop on *"Himalayan Cryosphere Studies: Recent advances and challenges"* at the Indian Institute of Remote Sensing, Dehradun, India
June 13–14, 2019	Regional Workshop on *"Air Pollution and Health in Nepal and the HKH"* at ICIMOD Headquarters, Kathmandu, Nepal.
May 14–16, 2018	Training on *"Remote sensing of snow water resources in HKH region"* at ICIMOD Headquarters, Kathmandu, Nepal.
June 26–July 7, 2017	"*A Short Course on Dynamic Data Assimilation: Theory and Applications*" at the Indian Institute of Tropical Meteorology, Pune, India
June 19–24, 2017	"*Training on Glacier Studies and Remote Sensing*" at Divecha Centre for Climate Change, IISc, Bangalore, India
May 08–11, 2017	*MADICE summer school on "Antarctic Climate Variability and Ice Dynamics"* at the National Centre for Antarctic & Ocean Research, Goa, India
July 25–31, 2016	*"Glaciers and Water Resource Management"* was organized by the Global Initiative of Academic Networks (GIAN) at Jawaharlal Nehru University, New Delhi, India.

FIELD VISITS

April 07–24, 2019	**Everest Base Camp** (5400 m a.m.s.l.) in Nepal I was a member of the science team during the Perpetual Planet Everest Expedition, which was organized by the National Geographic Society. During the expedition, I took responsibility for spectroradiometer measurements and for collecting field samples to analyze light-absorbing impurities in snow/ice.
September 25–30, 2017	**Satopanth Glacier** (4700 m a.m.s.l.) in Uttarakhand, India DGPS survey and collection of ice/water samples

FELLOWSHIPS AND AWARDS

- ICIMOD Atmosphere Doctoral Fellowship 2018
- GATE (Ecology and Evolution) 2016, AIR-54, conducted by IISc, Bangalore
- UGC NET JRF (Environmental Science) December 2015

TECHNICAL SKILLS

Programming Language

MATLAB, Python, Fortran, bash

Relevant Tools/Software

- ArcGIS, QGIS, Google Earth Engine
- CDO (Climate Data Operators), NCO (netCDF Operators)

- General circulation model (NASA GISS ModelE2.1), Regional climate model (RegCM4.7)
- Chemistry-transport model (CHIMERE, WRF-Chem)
- Albedo model (SNICAR), Radiative transfer model (SBDART)
- Temperature index model (SPHY, SRM), Energy balance model (COSIPY, DEBAM)
- Microsoft Excel, Word, and PowerPoint

Datasets

- Satellite datasets (MODIS, OMI, GPM, TROPOMI/Sentinel-5P, GEMS)
- Reanalysis and gridded datasets (ERA5, CAMS, CRU TS, CHIRPS, GPCP, HadCRUT4)
- Large-scale climate datasets (CMIPs)

Working Platform/System

Windows, Linux, HPC environments

PROFESSIONAL MEMBERSHIPS

International Water Resources Association (IWRA)–00742

Life Member

Indian Aerosol Science and Technology Association (IASTA)–IASTA-LM-640
Indian Meteorological Society (IMS)–LM-3380
Indian Science Congress Association (ISCA)–L34898
Indian Society of Arctic Researchers (ISAR)–IN0011
Indian Society of Geomatics (ISG)–ISG-L-2237
Indian Society of Remote Sensing (ISRS)–L-5004
Society of Young Agriculture and Hydrology Scholars of India (SYAHI)–S21/0006

REFERENCES

Available on request.