

# Curriculum vitae

## Jairam Singh Yadav

Ph.D., Scientist-'B'

Wadia Institute of Himalayan Geology (WIHG),

(Dept. of Science and Technology, Govt. of India)

33 - Gen. Mahadeo Singh Road, Dehradun, India

**Research Group:** Glaciology and Hydrogeology

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**RG:** <https://www.researchgate.net/profile/Jairam-Yadav>

**GS:** <https://scholar.google.com/citations?user=gfODj9cAAAAJ&hl=en>



## Research Interests

- Himalayan Cryosphere and Associated Hazards
- Assessment of Glacier Dynamics
- Glacier Geomorphology and Surface Processes
- Climate Change and Their Impacts
- Mountain Meteorology
- Hydro-meteorology
- Water Chemistry

## Education and Academics

- *Ph.D. in:* Applied Geophysics (2020), Kurukshetra University, Kurukshetra, India
- *Master in:* Mathematics (2007), C.S.J.M. University, Kanpur, Uttar Pradesh; Applied Geology (2010), University of Allahabad, Uttar Pradesh, and Physics (2023), UOU, Haldwani, Uttarakhand.
- *Graduate in:* Physics, Chemistry, and Maths (2005), University of Allahabad, Allahabad, Uttar Pradesh
- *GATE-2013:* Qualified (Geophysics)

## Professional and Teaching Experience

- **2022 to present:** Scientist at Wadia Institute of Himalayan Geology, Dehradun.
- **2020-2022:** Research Associate (RA) at Wadia Institute of Himalayan Geology, Dehradun.
- **2020:** Ph.D. Awarded in Geophysics under the supervision of Dr. D.P. Dobhal, Scientist 'F' WIHG, and Dr. R.B.S. Yadav, Assist. Professor, Kurukshetra University.

- **2014 - 2018:** Senior Research Fellow, Wadia Institute of Himalayan Geology, Dehradun.
- **2012 - 2014:** Junior Research Fellow, Wadia Institute of Himalayan Geology, Dehradun.
- **2018-2020:** Teaching Geophysics to M.Sc. students and Gate aspirants experience in coaching -Geosciences, GMS Road, Dehradun

### Field Experience

- Conducted field expeditions to understand the Cryospheric processes (mass balance, melt rate, morphometric changes, identifying permafrost zones, water chemistry, and hydro-meteorological studies) in the Himalayan glaciers (Dokriani Glacier (2013, 2014, 2015, 2024), Chorabari Glacier (2021, 2022), Chhota Shigri Glacier (2013), Hamtah Glacier (2014) and Karakoram Glaciers (Saser La Glacier, Yangbar Glacier, Momstang Glacier, Changmolung Glacier) (2022, 2023, 2024).
- Conducted fieldwork (2022, 2023) to understand the water chemistry and emission of Greenhouse Gases (GHGs) in the Doon wetland and adjacent areas.
- Field studies (2022) in understanding the geothermal activities in the Kumaun Himalaya and Karakoram region.
- Field studies (2023) in the Joshimath to investigate the causes of land subsidence.

### Instrumentation and software skills

Ground Penetrating Radar (GPR-Pulse Ekko), Automatic Weather Station (AWS), Trimble DGPS for real-time kinematic (RTK) surveys, LI-COR, and Smart Chamber for GHG emission, Ion Chromatography (IC) and Picarro Water Isotope Analyzer, CorelDRAW, MS Excel, Origin, R (programming language).

### Voluntary Editorial Services (as Reviewer)

- Environmental Earth Sciences
- Himalayan Geology
- Environmental Monitoring and Assessment
- Journal of Hydrology

### International/National Seminars/Workshop/ Training

- **2015:** Training program on "Modelling of Mountain Glacier Dynamics", organized by Earth and Climate Science, Indian Institute of Science Education and Research (IISER) Pune, from 23<sup>rd</sup> Sept to 4<sup>th</sup> Oct 2015.

- **2014:** Field Training Program on Glacier, sponsored by the Department of Science and Technology, Organized by Geological Survey of India (GSI), Lucknow from August 4<sup>th</sup> to 7<sup>th</sup> September 2014.
- **2013:** “Indo – Swiss Capacity Building Training Program on Himalayan Glaciology Level – II” organized by the Department of Science and Technology and School of Environmental Science, Jawaharlal Nehru University, New Delhi from 19<sup>th</sup> September to 22<sup>nd</sup> November 2013.
- **2013:** “Indo–Swiss Capacity Building Training Program on Himalayan Glaciology Level – I” organized by the Department of Science and Technology and School of Environmental Science, Jawaharlal Nehru University, New Delhi, from 1<sup>st</sup> to 27<sup>th</sup> April 2013.

#### Awards/Fellowships/Honours/Memorial Lectures

- **2024:** Best paper award-2022 of Wadia Institute of Himalayan Geology on the foundation day, June 29, 2023.
- **2023:** Best paper award-2022 of Wadia Institute of Himalayan Geology on the foundation day, June 29, 2023.
- **2018:** 3<sup>rd</sup> Best Poster Presentation Award at a national conference at Wadia Institute of Himalayan Geology, Dehradun

#### Research Publications [SCI Journals]

##### **2024:**

- Sameer K. Tiwari<sup>1</sup>, **Jairam Singh Yadav**, Kalachand Sain, Santosh K. Rai, Aditya Kharya, Vinit Kumar and Pratap Chandra Sethy (2024) Water quality assessment of Upper Ganga and Yamuna river systems during COVID-19 pandemic-induced lockdown: imprints of river rejuvenation. *Geochemical Transactions* (2024) 25:8. <https://doi.org/10.1186/s12932-024-00092-w>
- **Jairam Singh Yadav**, Sameer K Tiwari, Rakesh Bhambri, Kalachand Sain, Pawan Patidar, Ayushi Baiswar. Inter-intra-seasonality of meteorological drivers of Chorabari Glacier, central Himalaya: implications for mass fluctuations and associated hazards. *Journal of Hydrometeorology*. <https://doi.org/10.1175/JHM-D-22-0231.1>
- Rakesh Bhambri, Manish Mehta, Sameer K Tiwari, **Jairam Singh Yadav**, Kalachand Sain. High mountain hazards in Uttarakhand. Geo-information for Disaster Monitoring and Management, *Springer International Publishing*, 181-210. (Book Chapter) [https://doi.org/10.1007/978-3-031-51053-3\\_9](https://doi.org/10.1007/978-3-031-51053-3_9)

## 2023:

- Sameer K Tiwari, Kalachand Sain, Sehajnoor Kaur, [Jairam Singh Yadav](#) and Ayushi Baiswar. Degassed versus Consumed Flux of CO<sub>2</sub> from the Third Pole. *Journal of the Geological Society of India*, 99, (2023). <https://doi.org/10.1007/s12594-023-2464-0>
- Kaur, Sehajnoor, [Jairam Singh Yadav](#), Rakesh Bhambri, Kalachand Sain, and Sameer K. Tiwari. "Assessment of geothermal potential of Kumaun Himalaya: A perspective for harnessing green energy." *Renewable Energy* (2023). <https://doi.org/10.1016/j.renene.2023.05.112>
- Bhambri, Rakesh, Susanne Schmidt, Pritam Chand, Marcus Nüsser, Umesh Haritashya, Kalachand Sain, Sameer K. Tiwari, and [Jairam Singh Yadav](#). "Heterogeneity in glacier thinning and slowdown of ice movement in the Garhwal Himalaya, India." *Science of The Total Environment* 875 (2023): 162625. <https://doi.org/10.1016/j.scitotenv.2023.162625>
- Shah, Rouf A., Santosh K. Rai, and [Jairam Singh Yadav](#). "Understanding recharge processes and solute sources of groundwater in karst settings of the Lesser Himalaya, India." *Arabian Journal of Geosciences* 16, no. 3 (2023): 186. <https://doi.org/10.1007/s12517-023-11274-8>
- Baiswar, Ayushi, [Jairam Singh Yadav](#), Kalachand Sain, Rakesh Bhambri, Arjun Pandey, and Sameer K. Tiwari. "Emission of greenhouse gases due to anthropogenic activities: an environmental assessment from paddy rice fields." *Environmental Science and Pollution Research* 30, no. 13 (2023): 37039-37054. <https://doi.org/10.1007/s11356-022-24838-0>
- Bhambri, Rakesh, Kalachand Sain, Pritam Chand, Deepak Srivastava, Sameer K. Tiwari, and [Jairam Singh Yadav](#). "Frontal Changes of Gangotri Glacier, Garhwal Himalaya, between 1935 and 2022." *Journal of the Geological Society of India* 99, no. 2 (2023): 169-172. <http://dx.doi.org/10.1007/s12594-023-2283-3>
- Shah, Rouf Ahmad, Santosh Kumar Rai, [Jairam Singh Yadav](#), and Sameer Kumar Tiwari. "Stable isotope hydrology of surface and groundwater from the Doon Valley: geometeorological processes and hydraulic linkages." *Hydrological Sciences Journal* 68, no. 1 (2023): 76-90. <https://doi.org/10.1080/02626667.2022.2144321>

## 2022:

- [Jairam Singh Yadav](#), Sameer K. Tiwari, Santosh K. Rai, Rouf A. Shah, R. B. S. Yadav, and Rajiv Kumar. "Characterization of meteorological parameters over Dokriani Glacier catchment, Central Himalaya: implications for regional perspectives." *Meteorology and Atmospheric Physics* 134, no. 5 (2022): 88. <http://dx.doi.org/10.1007/s00703-022-00923-4>
- Sandhu, Manisha, R. B. S. Yadav, Rajiv Kumar, Santanu Baruah, A. P. Singh, Minakshi Mishra, and [Jairam Singh Yadav](#). "Spatial variability of earthquake hazard parameters, return

periods and probabilities of earthquake occurrences in the eastern Himalayan seismic belt." *Physics and Chemistry of the Earth, Parts A/B/C* 127 (2022): 103194. <https://doi.org/10.1016/j.pce.2022.103194>

- Tiwari, Sameer K., Kalachand Sain, and [Jairam Singh Yadav](#). "Assessment of Geothermal Renewable Energy with Reference to Tapoban Geothermal Fields, Garhwal Northwest Himalaya, India." *Journal of the Geological Society of India* 98, no. 6 (2022): 765-770. <https://doi.org/10.1007/s12594-022-2066-2>
- Shah, Rouf Ahmad, Ghulam Jeelani, [Jairam Singh Yadav](#), and Santosh Kumar Rai. "Hydrogeochemical and stable isotopic evidence to different water origins of karst springs in the western Himalayas, India." *Environmental Earth Sciences* 81, no. 10 (2022): 297. <http://dx.doi.org/10.1007/s12665-022-10397-7>
- Garg, Purushottam Kumar, [Jairam Singh Yadav](#), Santosh Kumar Rai, and Aparna Shukla. "Mass balance and morphological evolution of the Dokriani Glacier, central Himalaya, India during 1999–2014." *Geoscience Frontiers* 13, no. 1 (2022): 101290. <https://doi.org/10.1016/j.gsf.2021.101290>

## 2021:

- Shah, Rouf Ahmad, Javid Ahmad Ganaie, Sayar Yaseen, [Jairam Singh Yadav](#), Santosh Kumar Rai, Tanveer Ahmad Dar, and Sameer Kumar Tiwari. "Aquatic geochemistry of a major freshwater lake in the Kashmir Himalaya: solute acquisition and denudation process in the lacustrine system." *Environmental Monitoring and Assessment* 193 (2021): 1-15. <https://doi.org/10.1007/s10661-021-09623-9>
- [Jairam Singh Yadav](#), Sameer K. Tiwari, Anshuman Misra, Santosh K. Rai, and Ravi K. Yadav. "High-altitude meteorology of Indian Himalayan Region: complexities, effects, and resolutions." *Environmental Monitoring and Assessment* 193 (2021): 1-29. <https://link.springer.com/article/10.1007%2Fs10661-021-09418-y>
- [Jairam Singh Yadav](#), Anshuman Misra, D. P. Dobhal, R. B. S. Yadav, and Rajeev Upadhyay. "Snow cover mapping, topographic controls and integration of meteorological data sets in Din-Gad Basin, Central Himalaya." *Quaternary International* 575 (2021): 160-177. <https://doi.org/10.1016/j.quaint.2020.05.030>

## 2019:

- [Jairam Singh Yadav](#), Bhanu Pratap, Anil K. Gupta, D. P. Dobhal, R. B. S. Yadav, and Sameer K. Tiwari. "Spatio-temporal variability of near-surface air temperature in the Dokriani glacier catchment (DGC), central Himalaya." *Theoretical and Applied Climatology* 136 (2019): 1513-1532. <https://link.springer.com/article/10.1007/s00704-018-2544-z>

## 2018:

- Tiwari, Sameer K., Amit Kumar, Anil K. Gupta, Akshaya Verma, Rakesh Bhambri, Shipika Sundriyal, and [Jairam Singh Yadav](#). "Hydrochemistry of meltwater draining from Dokriani Glacier during early and late ablation season, West Central Himalaya." *Himalayan Geology* 39, no. 1 (2018): 121-132.

### Oral/Poster Presentation in Conferences/Seminar (Total-09)

- [Jairam Singh Yadav](#), Sameer K. Tiwari, Rakesh Bhambri, Kalachand Sain (2023). Abnormal changes in climate drivers as an indicator of glacier-related hazards: implications for future perspectives, *6th World Congress on Disaster Management (WCDM)* during 28 November - 1 December 2023 at Graphic Era University, Dehradun, India. (Poster Presentation)
- Ayushi Baiswar, [Jairam Singh Yadav](#), Kalachand Sain, Sameer K. Tiwari (2022). Emission of Greenhouse gases from tropical freshwater wetlands of the Doon Valley: Implications for environmental perspectives, *National Geo-Research Scholar Meet (NGRSM)* (Page No. 10-11), (Oral Presentation)
- Sunita Kumari, [Jairam Singh Yadav](#), Kalachand Sain, Sameer K. Tiwari (2022). Reconciling geothermal reservoir temperature of the Kumaun Himalayas: Implications for harnessing geothermal energy. *National Geo-Research Scholar Meet (NGRSM)-2022* (Page No. 65-66) (Oral Presentation)
- [Jairam Singh Yadav](#) (2022). Third Pole's Climate Change: Implications for Regional Perspectives, *2<sup>nd</sup> World Congress on Climate Change and Environmental Health* held on March 25-26, 2022, in Paris, France. (Oral Presentation)
- [Jairam Singh Yadav](#), Sameer K. Tiwari, Kalachand Sain (2021). Coupling of Heat Exchange Processes with Surface Melting of Dokriani Glacier, Central Himalayas. 42<sup>nd</sup> Annual Convention and Seminar on Exploration Geophysics, *Association of Exploration Geophysicists (AEG)*, December 02, 2021, at WIHG. (Oral Presentation)
- Ayushi Baiswar, [Jairam Singh Yadav](#), Kalachand Sain, Sameer K. Tiwari, Arjun Pandey (2021) Emission of Greenhouse Gases due to Anthropogenic Activities: Environmental Assessment from Haryana Paddy Rice Fields, India 42<sup>nd</sup> Annual Convention and Seminar on Exploration Geophysics, *Association of exploration Geophysicists (AEG)*, December 02, 2021 at WIHG. (Oral Presentation)
- [Jairam Singh Yadav](#), Ayushi Baiswar, Kalachand sain, Sameer K. Tiwari (2021) Quantifying Surface Melt Dynamics from Debris-Covered Dokriani Glacier, Central Himalayas (2012-2018), 42<sup>nd</sup> Annual Convention and Seminar on Exploration Geophysics, *Association of exploration Geophysicists (AEG)*, December 02, 2021 at WIHG. (Oral Presentation)

- Sunita Kumari, Kalachand Sain, [Jairam Singh Yadav](#), Sameer K. Tiwari (2021) Geothermal Studies of Kumaun West Central Himalaya: Harnessing the green energy, 42<sup>nd</sup> Annual Convention and Seminar on Exploration Geophysics, ***Association of exploration Geophysicists (AEG)***, December 02, 2021 at WIHG. (Oral Presentation)
- [Jairam Singh Yadav](#), Bhanu Pratap, A.K. Gupta, Sameer K Tiwari (2016), Temperature Variability of Dokriani Glacier Catchment, Central Himalaya, India” ***National Geo-Research Scholar Meet (NGRSM)***-2016 at Wadia Institute of Himalayan Geology, Dehradun. (Oral Presentation).