

CV Dr Anshuman Misra



Executive Summary and Vision

Obtained **PhD** degree, worked in Wadia Institute of Himalayan Geology, Dehradun; and specialized in **Integrated Remote Sensing and GIS techniques**, for mapping snow cover, its seasonal, annual, and long-term variability, related climatic, hydrological, and other applied aspects. Specialized in **processing large volume of satellite data** and interpretation, by both visual and automatic methods and put as layers on GIS platform.

Temperature data is used to generate isotherms, co-register with the snow cover extent and draw inferences.

Before this, passed B.Sc. and M.Sc. with Geology from Pune and Kumaun Universities, both in **1st Division (64%) and (67%)**, respectively. Completed Six Months **Post-Graduate Diploma in Geoinformatics** from **Centre for Development of Advanced Computing (C-DAC), Pune, in 1st Division**; learnt Remote Sensing and GIS techniques. Attended training in Glacier studies, Climate and Remote Sensing at **Indian Institute of Sciences, Bengaluru**; Microwave Remote Sensing Applications at National Remote Sensing Centre, Hyderabad and Field Training in Glaciology by Geological Survey of India. I have two year and ten months, post PhD experience of working in **industry** as Scientist. This includes ten months with **Engineering Consultants** and **Two years in Remote Sensing Application Centre**. Achieved 59th rank, in Joint CSIR-UGC **Test (NET)** in (2010). I have robust health, passion for **Field Studies** and have experience of working in extremely cold snow-covered mountain belt. Being son of a Field Geologist of Geological Survey of India, I have been exposed to field life from the childhood. Well trained in field techniques along with mapping instruments such as **Total Station and Differential Global Positioning System (DGPS)**. Specialized, in RADAR data processing, interpretation for the study of snow dunes, glaciers, tectonics and volcanism in Antarctica. Presently, working as a **GIS (Geographical Information System) and Remote Sensing Expert**, at Government of Uttar Pradesh Remote Sensing Application Centre, Lucknow; from 27th January 2020.

PERSONAL

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ACADEMIC QUALIFICATIONS

1. **PhD** from the **Kumaun University**, Nainital, **(2021)**.

Mapped the extent of snow cover during both accumulation and melting months, to bring out its variability on seasonal, yearly and long duration basis. The horizontal as well as vertical movement of snow cover extent, has emerged as very important parameter for understanding the climatic variations and availability of meltwater in river systems. Snow cover limiting lines are co-registered with the isotherms, demarcated from automatic weather stations in the area. This information has been vital for bringing out depletion pattern in totality. Extended research is progressing to draw isotherms from satellite based thermal scanners. Slope angles and aspect (sun direction) derived from the digital elevation models in the entire terrain have been helpful to identify vulnerable avalanche zones.

2. Six months Post Graduate Diploma in Geo-Informatics (**PG-DGi**), form Centre for Development for Advance Computing (**C-DAC**) Pune, in Remote Sensing and GIS techniques, learnt Java, C, C++ and Python languages (2011).
3. M.Sc. in Geology from Kumaun University, Nainital and obtained **First Division with 67% marks (2007 to 2009)**.
4. B.Sc. with Geology, Zoology and Botany from Fergusson College, University of Pune and obtained **First Division with 64.25% (2004 to 2007)**

OTHER EXAMINATIONS PASSED

Achieved 59th rank in Joint CSIR-UGC Test for Junior Research Fellowship and Lectureship (**NET**) for Lectureship (2010)

PROFESSIONAL AND RESEARCH EXPERIENCE

- 1) Presently working as a GIS (Geographical Information System) and Remote Sensing Expert at Government of Uttar Pradesh Remote Sensing Application Centre, Lucknow from 27th January 2020.
- 2) Worked as Scientist in Avadh Consultancy Services Dehradun, for One year, from 1st February 2019 to 24th January 2020. Attended to different Geotechnical Projects and management of Water Resources in Himalayan region.
- 3) Did research at Wadia Institute of Himalayan Geology, Dehradun as JRF and later as SRF for PhD program on “**Application of Integrated Remote Sensing Technique and Meteorological Parameters to Assess the Snow**

Cover in Dokriani and Chorabari Glacier Catchments of Uttarakhand Himalaya, India". Established relationship with snow cover depletion pattern and metrological data sets in the Himalaya. Remote Sensing applications on various data sets for snow cover mapping and monitoring of glaciers.

- 4) Worked at the Birbal Sahni Institute of Palaeosciences, Lucknow, as Junior Research Fellow in Department of Science and Technology, New Delhi sponsored project entitled “**Analysis of climatic change during the Quaternary from glacial sites in India based on multi-proxy data**”, April 2012 to October 2012.
- 5) During Geoinformatics course, did Project on “**Geomorphological and Geological Mapping with River Dynamics using Geoinformatics in parts of Bihar**”.

TRAINING AND PROJECTS

1. Attended "**Training Course on Glacier Studies, Climate Change and Remote Sensing**", organized by the Indian Institute of Science, Bengaluru during 18-29 July 2016.
2. Attended “**Microwave Remote Sensing Application**” organised by National Remote Sensing Centre, Hyderabad, May 20-31, 2013.
3. Attended “**Field Training Course in Glaciology**” conducted by the Training Institute, Geological Survey of India, at Manali/Hamta Glacier, Himachal Pradesh, from 7 August to 3 September 2012, sponsored by Department of Science and Technology, Government of India.
4. “Project in improving understanding of groundwater resources through field research: Purandar taluka and other areas around Pune”.

MEMBERSHIP OF PROFESSIONAL BODIES

1. Life member of Indian Society of Remote Sensing.
2. Life member of Deccan Volcanological Society of India.

RESEARCH PAPERS PUBLISHED

1. Yadav, J. S., Misra, A., Dobhal, D. P., Yadav, R. B. S., & Upadhyay, R. (2020). Snow cover mapping, topographic controls and integration of meteorological data sets in Din-Gad Basin, Central Himalaya. *Quaternary International*, 575 - 576 (2021) 160 – 177.
<https://doi.org/10.1016/j.quaint.2020.05.030>.
2. Misra, Anshuman, Amit Kumar, Rakesh Bhambri, Umesh K. Haritashya, Akshaya Verma, Dwarika P. Dobhal, Anil K. Gupta, Gaurav Gupta, and Rajeev Upadhyay (2020). Topographic and climatic influence on seasonal

- snow cover: implications for the hydrology of ungauged Himalayan basins, India. *Journal of Hydrology*, vol 585, 124716.
3. Bhambri, Rakesh, Kenneth Hewitt, Prashant Kawishwar, Amit Kumar, Akshaya Verma, Sameer Tiwari, and **Anshuman Misra**. "Ice-dams, outburst floods, and movement heterogeneity of glaciers, Karakoram." *Global and Planetary Change*, 180, (2019), pp. 100 –116.
 4. Rakesh Bhambri, **Anshuman Misra**, Amit Kumar, Anil Kumar Gupta. **Glacier Lake inventory of Himachal Pradesh**, *Himalayan Geology (Journal)*, 2018, 39 vol (1) pp 1-32.
 5. Kumar, Amit, Akshaya Verma, Anupam Anand Gokhale, Rakesh Bhambri, **Anshuman Misra**, Shipika Sundriyal, Dwarika Prasad Dobhal, and Naval Kishore. "Hydrometeorological assessments and suspended sediment delivery from a central Himalayan glacier in the upper Ganga basin." *International Journal of Sediment Research* 33, no. 4 (2018): 493 – 509.
 6. Misra, K. S., Misra, N., & **Misra, A.** (2017). Geomorphological and geological suitability for inter-basin transfer of water by linking river basins in Maharashtra. *Journal of the Geological Society of India*, 90(2), 253-255.
 7. MISRA, K. S., & **MISRA, A.** (2016). Emplacement of Dyke Swarms, Cretaceous Volcanism and Development of Petroliferous Basins in and around Peninsular India. *Acta Geologica Sinica-English Edition*, 1(90), 59-60.
 8. Misra K.S., Misra Anshuman (2013). Hydrocarbon Exploration in Sub-Basalt Basins around Peninsular India. *American Association of Petroleum Geologists*, Search and Discovery Article #50804.
 9. Misra K.S., Misra Anshuman (2010). Tectonic Evolution of Sedimentary Basin and Development of Hydrocarbon Pools along the Offshore and Oceanic Regions of Peninsular India. *Gondwana Geological Magazine*, Special Volume No. 12, pp.165 – 176.
 10. Misra, K. S., Misra, N., & Misra, Anshuman (2017). Achieving double digit growth rate for a century by inter basin transfer of river water in India. *Proceedings National Conference on Sustainable Water and Environmental Management (SWEM - 2017)* pp. 479-492.

Research Paper Accepted for Publication

'Compacted Snow Dune Complexes in Antarctica and their applicability as New Climate Change and Basement Tectonic Parameters' is accepted for publication in the upcoming volume of Society of Earth Scientists Series by Springer on Climate Change.

Awards / Honours:-

1. Best Research Paper Award 2019 to "Bhambri, Rakesh, Kenneth Hewitt, Prashant Kawishwar, Amit Kumar, Akshaya Verma, Sameer Tiwari, and Anshuman Misra. "Ice-dams, outburst floods, and movement heterogeneity of

glaciers, Karakoram." *Global and Planetary Change*, 180, 2019, pp. 100 – 116" by Wadia Institute of Himalayan Geology, Dehradun.

ABSTRACTS IN CONFERENCE/SYMPOSIA

1. **Anshuman Misra**, Amit Kumar, Rakesh Bhambri, D.P Dobhal, Rajeev Upadhyay., Estimation of Snow Cover Area by Remote Sensing Data Sets – A Case Study of Chorabari Glacier Basin, Garhwal Himalaya, India. XII-International Symposium on Antarctic Earth Sciences (ISAES 2015), Goa, India.
2. **Anshuman Misra**, D.P Dobhal., Synthetic Aperture Radar (SAR) Data in Mapping and Study of Compacted Snow Dune Complexes and Active Lineament Tectonics in Antarctica. XII-International Symposium on Antarctic Earth Sciences (ISAES 2015), Goa, India.
3. **Misra Anshuman**, Misra K.S., Evolutionary Tectonics of Combined Gondwana – Proterozoic Basin of Peninsular India. IAGR 8th International Symposium on Gondwana to Asia CSIR– NGRI 2011, Abstracts Vol, P.72.