



Publications:

- Tiwari, S., and Yadav*, B. K. (2023). Role of hydrogeological factors on Aquifer Storage and Recovery (ASR) performance in saline groundwater regions, ASCE's Journal of Water Resources Planning and Management, Accepted (IF=3.457) Q1
- Guntu, R. K., Merz, B., and Agarwal, A.: Increased likelihood of compound dry and hot extremes in India, Atmospheric Res., 290, 106789, <https://doi.org/10.1016/j.atmosres.2023.106789>, 2023. (IF=5.965) Q1
- Dass, B., Daniel, D., Saxena, N., Sharma, A., Sen, D., & Sen, S. (2023). Informing watershed management in data-scarce Indian Himalayas. Water Security; doi: <https://doi.org/10.1016/j.wasec.2023.100138> (IF=3.87) Q1

International Conference:

- Isly Issac, Shri N.N.Rai, Prof.N.K.Goel. "Approach and methodology for estimating combined glacial lake outburst flood (GLOF) and PMF design flood for Bajoli Holi hydro-electric project in the Indian Himalayas" German-Israeli Foundation for Science Research and Development (GIF) Young Scientists Meeting on Hazards and Risks in Negev, Israel, from March 13th to 17th, 2023.
- Dass, B., & Sen, S. (2023). Understanding spring aquifer dynamics through observational data patterns, stable isotopes, and hydrochemistry–An account of experimental pilots in the Indian Himalayas (No. EGU23-702). Copernicus Meetings.
- Krishnaswamy, J., Daniel, D., Sen, S., & Khanna, J. (2023). Emerging ecological and environmental hazards in the Himalayas (No. EGU23-11871). Copernicus Meetings.
- Reddy, P. K., Bhattarai, N., & Sen, S. (2023). Understanding Evapotranspiration Variability between the Eastern and Western Himalayas (No. EGU23-10850). Copernicus Meetings.

Awards/Recognition

- Prof. Ankit Agarwal has been selected as a Young Outstanding Faculty 2023 at the Indian Institute of Technology Roorkee and awarded Institute Research Fellowship for 03 years.
- Prof. Ankit Agarwal, Department of Hydrology, has been elevated to Fellow of the Royal Meteorological Society (FRMetS) by RMetS, London, UK. His outstanding contribution to meteorology and Climate has been widely recognized.



- Mr. Shubham Tiwari under the supervision of Prof. Brijesh Kumar Yadav has successfully defended his PhD viva on “Managed Aquifer Recharge in Saline Groundwater Regions for Enhanced Recovery of Freshwater”. Congratulations Dr. Shubham!

Invited Lecture

- Prof. Brijesh Kumar Yadav delivered an expert talk on “Comprehensive Assessment of Microplastics Movement through Soil-water around an MSW Dumpsite” at NTPC Solapur (MH) on May 26, 2023
- Prof. Ankit Agarwal was invited to participate in the ‘International Climate Research Conclave 2023 (ICRC 2023)’ being organized jointly by the Ministry of Earth Sciences (MoES) and Department of Science and Technology (DST), Govt. of India at the IIT Bombay, Mumbai, India on 26th and 27th May 2023.
- Prof. Bhaskar Jyoti Deka delivered a lecture titled “Salinity of water and research-based solutions” on 16th May 2023 at the Workshop on “Water Treatment Technologies for Water Challenged Sites in India: Opportunities for Research Based Solutions” during 15-16th May 2023 at the Department of Chemical Engineering, IIT Roorkee.
- Prof. Bhaskar Jyoti Deka delivered a lecture titled “Overview of water treatment technologies” on 23rd May 2023 at the Workshop on “Water Quality and its Interlinkages with Sustainable Development” at Department of WRDM, IIT Roorkee.



Publications:

- Stefan Buschmann, Peter Hoffmann, Ankit Agarwal, Norbert Marwan, and Thomas Nocke. GPU-based, interactive exploration of large spatio-temporal climate networks, Chaos (2023) <https://aip.scitation.org/doi/figure/10.1063/5.0131933>
- Malla, M. K., & Arya, D. S. (2023). Event-based extreme precipitation variability analysis over a part of the Hindu KushHimalayan region. International Journal of Climatology,1–24.<https://doi.org/10.1002/joc.808224>

Book Chapter:

- Jaswant Singh and Brijesh Kumar Yadav (2023) "Microplastics in River Sediments Nearby to a Sewage Treatment Plant: Extraction, Processing and Characterization Assessment" in Recent Developments in Energy and Environment by Springer Nature Singapore (Accepted)

International Conference:

- Abinesh Ganapathy*, Ankit Agarwal. (2023). Multi-scale SST-Streamflow connectivity: A complex network approach. Nonlinear Data Analysis and Modeling: Advances, Applications, Perspectives. PIK Potsdam, Germany. (March 15-17 2023). <https://nda23.pik-potsdam.de/?a=poster>
- Akash Singh Raghuvanshi*, Ankit Agarwal. (2023). Linking Anomalous High Moisture Transport to Extreme Precipitation. Nonlinear Data Analysis and Modeling: Advances, Applications, Perspectives. PIK Potsdam, Germany. (March 15-17 2023). <https://nda23.pik-potsdam.de>
- Abinesh Ganapathy*, David M Hannah, Ankit Agarwal. (2023). Flood frequency analysis integrated with unprecedented flood samples and mixed probability distribution. EGU General Assembly 2023, Vienna, Austria, 24–28 Apr 2023, EGU23-4046. <https://doi.org/10.5194/egusphere-egu23-4046>
- kulkarni, S. and Agarwal, A.: Unraveling the association between arctic region and Indian summer monsoon – an empirical study , EGU General Assembly 2023, Vienna, Austria, 24–28 Apr 2023, EGU23-2111, <https://doi.org/10.5194/egusphere-egu23-2111>
- Ravi Kumar Guntu, Bruno Merz and Ankit Agarwal. Challenges for assessing the risk of compound extremes.EGU General Assembly 2023, Vienna, Austria, 24–28 Apr 2023. <https://doi.org/10.5194/egusphere-egu23-154>
- Ankit Agarwal*. Disentangling the characteristics and Drivers of Compound Drought and Hot Extremes. EGU General Assembly 2023, Vienna, Austria, 24–28 Apr 2023, EGU23-8830.
- Kumari, A., Singh Raghuvanshi, A., and Agarwal, A.: Evaluation of different Precipitation Products with IMD dataset emphasizing on Hydrological Modelling,, EGU General Assembly 2023, Vienna, Austria, 24–28 Apr 2023, EGU23-16849, <https://doi.org/10.5194/egusphere-egu23-16849>



- Gupta, H., Singh Raghuvanshi, A., and Agarwal, A.: Moisture transport associated with multi-day precipitation events in India, EGU General Assembly 2023, Vienna, Austria, 24–28 Apr 2023, EGU23-781, <https://doi.org/10.5194/egusphere-egu23-781>
- Abhishek Kumar and Manoj Kumar Jain: " Non-contact Entropy based flow Estimation in Himalayan Rivers".as virtual poster in the recently held EGU General Assembly 2023 held in Vienna, Austria
- Bejagam, V., & Sharma, A. (2023). Characterization of ecohydrological indicators (EHIs) in India: a multi-scale perspective. EGU23. <https://doi.org/10.5194/EGUSPHERE-EGU23-340>
- Mangukiya, N. K., & Sharma, A. (2023). Evaluating Machine Learning Approach for Regional Flood Frequency Analysis in Data-sparse Regions. EGU23. <https://doi.org/10.5194/EGUSPHERE-EGU23-1278>
- Patle, P., Sharma, A., Singh, P. K., Ahmad, I., Matsuno, Y., Leh, M., & Ghosh, S. (2023). Assessment of Water Consumption Pattern & Agricultural Production using Water accounting Plus (WA+) Framework: A case study of Mahi River basin; EGU23. <https://doi.org/10.5194/EGUSPHERE-EGU23-2510>
- Singh, A., Bejagam, V., & Sharma, A. (2023). Examining the role of groundwater in the spatio-temporal variation of Ecosystem Water Use Efficiency in India. EGU23. <https://doi.org/10.5194/EGUSPHERE-EGU23-1618>
- Sahoo, T., Bejagam, V., & Sharma, A. (2023). Assessment of compound extremes using statistical methods in India. EGU23. <https://doi.org/10.5194/EGUSPHERE-EGU23-2305>

Awards and Achievements:

- Prof. Ankit Agarwal, has been awarded the 2023 Division Outstanding Early Career Scientist Awards of the European Geosciences Union (EGU). The 2023 Division Outstanding Early Career Scientist Awards will be conferred to him during the EGU General Assembly 2023, which will be held from 23–28 April in Vienna, Austria.
- Prof. Ankit Agarwal delivered a lecture on Geo & Hydro Science in DAAD PhD Proposal Writing Workshop on 4th April 2023.
- Prof. Ankit Agarwal and others organized a session on “Interaction of urban expansion with natural hazards” at the European Geophysical Union on 23-28th April 2023 held at Vienna, Austria.
- Prof. Bhaskar Jyoti Deka received Technology Readiness Level Booster (TRLB) of Rs. 15 Lacs for the patent application entitled "A superhydrophobic polystyrene/PVDF membrane coated with WO₃ nanocomposite for membrane distillation application".
- Ms. Pooja Patle (PhD candidate) got the prestigious prime minister research fellowship (PMRF).



- Mr. Aman Kumar (PhD got the prestigious prime minister research fellowship (PMRF).
- Mr. Prabhat Dwivedi (PhD candidate) got the prestigious prime minister research fellowship (PMRF).

Invited Keynote Speaker:

- Prof. Bhaskar Jyoti Deka delivered a keynote lecture titled “Optical coherence tomography study on the in situ ferrate pretreatment of water for the removal of dissolved organic matters” on 29th April 2023 at the International Conference on Low-Carbon Energy and Chemical Technology, conducted by the Department of Science and Technology of Shaanxi Province, Xi'an Jiaotong University.

Membership:

- Prof. Bhaskar Jyoti Deka has been selected as Life Member of Indian Desalination Association (InDA).

Miscellaneous

- Prof. Mayur Pal, Faculty of Mathematics and Natural Sciences (Kaunas University of Technology) visited the Department and delivered an Expert Talk "**Modelling fluid flow through porous media using MATLAB**" on April 15, 2023, coordinated by Prof. Brijesh Kumar Yadav.
- Prof. Bhaskar Jyoti Deka, Gaurav Vaghela, Shubham Ketan Sharma, Kunal Sharma and Nagendra Kumar Jilagam participated in the Uttarakhand Industry Expo (Uttarakhand Udyog Mahotsav: UKUM) on 20th March to demonstrate recently developed biodegradable superhydrophobic membrane, hollow fiber membranes, novel nanofiber membranes for PM2.5 removal from air.

