

March 2021

Publications

- Gupta P K, Yadav B, **Yadav B K**, Sushkova S, Basu, S (2021) Engineered Bioremediation of NAPL Polluted Sites: An Experimental and Simulation Optimization Approach under Heterogeneous Moisture and Temperature Conditions, ASCE Journal of Environmental Engineering (Accepted).
- Kai Ma, Dapeng Feng, Kathryn Lawson, Wen-Ping Tsai, Chuan Liang, Xiaorong Huang, **Ashutosh Sharma**, and Chaopeng Shen (2021). Transferring hydrologic data across continents -- leveraging data-rich regions to improve hydrologic prediction in data-sparse regions. Water Resources Research, 57, e2020WR028600. <https://doi.org/10.1029/2020WR028600>
- **Mayuri AshokRao Gadhawe, Ravi Kumar Guntu and Ankit Agarwal** (2021). "Network-based exploration of basin precipitation based on satellite and observed data." European Physical Journal Special Topics. <https://doi.org/10.1140/epjs/s11734-021-00017-z>
- Satish Kumar, **Ankit Agarwal**, Vasant Govind Kumar Villuri, Srinivas Pasupuleti, Dheeraj Kumar, Deo Raj Kaushal, Ashwin Kumar Gosain, Axel Bronstert, Bellie Sivakumar* (2021). Constructed Wetland Management in Urban Catchments for Mitigating Floods. Stochastic Environmental Research and Risk Assessment. 10.1007/s00477-021-02004-1
- Dass, B., **Sen, S.***, Sharma, A., Hussain, S., Rana, N., and Sen, D. 2021. Hydrological process monitoring for springshed management in the Indian Himalayan region: field observatory and reference database. Current Science, 120 (5): 791-799.

Projects

Co-PI: Prof. Bhaskar Jyoti Deka

Project title: Investigation of nanobubble flotation to remove micro/nano plastic from Sewage Treatment Works (STWs) in Hong Kong; Funding Agency: Environment and Conservation Fund, Govt of Hong Kong; Funding amount: HK\$ 500000.

Training Course

Prof. Brijesh K Yadav has successfully conducted the Five-day online QIP short term course on "Applied Solute Transport Modeling for Management of Polluted Land Sites" during March 15-19, 2021

Prof. Ashutosh served as Chair for the Technical Session on "Hydraulic & Hydrologic Modelling" at HYDRO 2020 - International Conference on Sunday, Mar 28, 2021.

Expert Talks

- Prof. Brijesh K Yadav gave a keynote talk "Applications of Permeable Reactive Barrier for the Remediation of Groundwater pollutants" during the 4th Indian

National Groundwater Conference (INGWC-2021) conducted online by JNTU Hyderabad on March 23, 2021.

- Prof. Brijesh K Yadav delivered an expert talk on “Remediation Techniques of Polluted Groundwater” during the World water day celebrated by the Central University of Haryana, on March 22, 2021.
- **Expert talk:** Prof Bhaskar Jyoti Deka delivered an online talk on “**Advanced membrane technologies for desalination**” during the 5 Days Online Training Programme on “Applied Solute Transport Modeling for Management of Polluted Land Sites”, 15-19 March 2021.
- Prof. Ashutosh delivered an invited talk on "Climate Change and its Impacts" in a one-day Seminar on "Emerging Trends in Civil Engineering" under TEQIP-III organized by Rajkiya Engineering College (REC), Azamgarh.

Achievements

- Dr. Brijesh Kumar Yadav has been promoted to full Professor at Department of Hydrology, IIT Roorkee w.e.f. March 18, 2021. Congratulations Prof. Yadav!
- Prof. Brijesh K Yadav has become the Chief Editor of the Association of Global Groundwater Scientists (AGGS) quarterly E-journal namely ‘Journal of Ground Water Research (**JGWR**)’.
- Mr. Shubham Tiwari, Research Scholar, received the 'ISH G.M.Nawathe Puraskar (Best Paper in Hydro- 2019 International) for the year 2020 for his paper “**Desalinization from Agricultural field through Ditch Drainage system**” presented in Hydro- 2019 International at Marriott Hotel & Convention Centre, hosted by Osmania University, Hyderabad.
- Mr. Ravi Kumar Guntu (Ph.D. Candidate) was awarded the prestigious “INSPIRE Fellowship” from the Department of Science and Technology (DST), Government of India to pursue doctoral studies.

International conference

Ravi Kumar, Guntu, Ankit Agarwal and Bramha Dutt Vishwakarma: Unravelling teleconnections of terrestrial water storage via complex networks. IAG-ICCC 2021 workshop. 03/2021.

<https://cloud.hcu-hamburg.de/nextcloud/index.php/s/wNYqwx3ooWBPLS#pdfviewer>

Department of Hydrology, IIT Roorkee contribution at vEGU 2021 Presentations

- COPREPARE and at vEGU 2021: Hydropower in the Himalayan hazardscape (EGU21-16589) by Wolfgang Schwanghart, Ugur Öztürk, **Sumit Sen, Ankit Agarwal**, and Oliver Koru. Session GM1.5 - 'Late-breaking Session: Hazard cascades from source to sink – the Elliot Creek and Chamoli events': **Wednesday, 28 April 2021, 13:51 CEST.**
- HydroClimX Lab: Network-based approach to unravel sea-surface temperature and streamflow connectivity at different timescales (EGU21-4670) by **Abinash Ganapathy, Ravi Kumar Guntu**, Ugur Ozturk, Bruno Merz, and **Ankit Agarwal.**

Session NP5.2 – ‘Complex systems science meets machine learning for new approaches to predictions and predictability estimation for geophysical systems’: [Wednesday, 28 April 2021](#), 11:25 CEST.

- [HydroClimX Lab](#): Wavelet Entropy Energy Measure (WEEM): A multiscale measure to grade a geophysical system's predictability (EGU21-703) by **Ravi Kumar Guntu** and **Ankit Agarwal**. Session NP5.2: [Wednesday, 28 April 2021](#), 13:30 CEST. <https://doi.org/10.5194/egusphere-egu21-703>
- [HydroClimX Lab](#): Disentangling spatiotemporal characteristics of six different unregulated streamflow stations in India (EGU21-7362) by **Tarun Pant**, Pavan Kumar Yeditha, **Ankit Agarwal**, and Maheswaran Rathinasamy. Session HS7.4- ‘Hydroclimatic change and unchange: exploring the mysteries of variability, nature, and human impact’: [Thursday, 29 April 2021](#), 11:57 CEST.
- [HydroClimX Lab](#): Network-based approach to explore basin network comparing observed and satellite dataset (EGU21-4840) by **Mayuri Gadhawe**, **Ravi Kumar Guntu**, and **Ankit Agarwal**. Session NP5.2 - 'Complex systems science meets machine learning for new approaches to predictions and predictability estimation for geophysical systems': [Wednesday, 28 April 2021](#), 13:45 CEST: <https://doi.org/10.5194/egusphere-egu21-4840>
- [HydroClimX Lab](#): Merging of satellite precipitation products: A quantile-based Bayesian model averaging approach by **Karisma Yumnam**, **Ravi Kumar Guntu**, **Ankit Agarwal**, and Maheswaran Rathinasamy. Session NP5.2 -'Complex systems science meets machine learning for new approaches to predictions and predictability estimation for geophysical systems': [Wednesday, 28 April 2021](#), 13:41 CEST.
- [Himalayan Hillslope Hydrology at vEGU 2021](#): Exploring Hydrological Connections: A Threshold and Complex Network-Based Approach (EGU21-7526) by **Aliva Nanda & Sumit Sen**. Session HS4.7 - 'Emerging approaches: Hydrologic-hydraulic modeling for urban floods and Thresholds in hydrology': [Wednesday, 28 April 2021](#), 09:51 CEST.

Impact of Climate Change on Combined Flood and Drought events in India (EGU21-9718) by **Salvadi Chetan Kumar**, **Vivek Gupta**, **Manoj Kumar Jain**. Session HS2.4.4 - 'Hydrological extremes: from droughts to floods': [Tuesday, 27 April 2021](#), 11:24 CEST.