Curriculum Vitae

Dr. Anurag Sharma
Assistant Professor
Department of Civil Engineering
NIT Rourkela, Odisha, India

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Specialization
Water Resource Engineering and Management
Research Interest
Sediment Transport, Turbulence, River Engineering, Eco Fluvial Hydraulics, Fluid Mechanics,

Education

Degree	Years	Institute	CPI	Thesis Title
PhD (Civil)	2015-2018	IIT Guwahati, India	NA	Structure of turbulence in a non-uniform sand bed channel with emphasis on the bedload transport
M. Tech. (Civil)	2013-15	IIT Guwahati, India	9.15	Turbulent characteristics of flow in a curved cross section sand bed channel
B. Tech. (Civil)	2006-10	NIT Silchar, India	8.3	

Work Experience

Position	Years	Organisation	Work Assigned
Assistant Professor	June 2020-Till date	NIT Rourkela	Teaching and Research
Assistant Professor	Aug 2019-May 2020	IITRAM Ahmedabad	Teaching and Research
Post-Doctoral Research Fellow	Sept, 2018-Aug 2019	Tsinghua University, Beijing, China	Research
Assistant Professor (TEQIP-III Faculty)	Jan-Sept, 2018	PMEC, Berhampur, India	Teaching
Senior Engineer	July2010-July 2013	Larsen and Toubro Limited, Chennai, India	Construction

Sponsored Projects/Research Projects

1. Study on Condition Assessment and Management Plan for the Mahanadi River Basin [2024-2027]

Administrative Responsibility

- Lab in-charge – Fluid Mechanics and Hydraulic Machines [July, 2022-Till Date]
- Faculty Advisor of B. Tech. students [July, 2022- Till Date]
- Faculty Advisor of M. Tech. students [July, 2021-July 2023]

PhD supervision

Sl no	Title	Roll No	Student Name	Status
1	Experimental and numerical studies of flow and bed features in a vegetated channel	521CE1010	Pritam Kumar	Ongoing
2	Effect of groundwater quality parameters and spatio-temporal variation of irrigation and GIS indices on paddy cultivation	521CE1009	Souvick Kumar Shaw	Ongoing
3	Flow Regimes and Bedform Migration in a compound channel	923CE5003	Amit Deb	Ongoing
4	Sediment transport modelling in an alluvial river	524CE6023	Jeniba Alam	Ongoing

M.Tech. supervision

Sl no	**Title**	**Roll No**	**Student Name**	**Status**
1	Experimental and Numerical Modelling of Flow Characteristics in A Meandering Channel with Double Layered Rigid Vegetated Flood Plains	219CE4338	Pinakana Lakshmanrao	Completed
2	Structure of turbulent flow in a meander gravel bed channel	220CE4063	Abhimanyu Kumar	Completed

3	Effect of Reynolds number on turbulence in heterogeneous channel	220CE4096	Rakesh Kumar Paswan	Completed
4	Three-dimensional analysis of turbulent flow in meandering sand bed channel	220CE4233	Suchismita Sahoo	Completed
5	Optimizing storage tank size of rainwater harvesting (RWH) inside NIT campus	220CE4470	Kartik Oram	Completed
6	A case study on flood analysis and flood susceptibility mapping at Mahanadi River Basin, India	221CE4235	Monalisha Meher	Completed
7	Reynolds stress anisotropy with higher order turbulence in flow through rigid emergent vegetation: an experimental study	221CE4237	Aaditya Ojha	Completed
8	Landslide susceptibility prediction in Darjeeling based on GIS and artificial neural network	221CE4225	Paulose Ajit	Completed
9	Numerical analysis of 3D flow properties in straight channel with emergent rigid vegetation	221CE4232	Abhishek Kumar	Completed
10	Investigating the Characteristics of Fluid Flow in a Narrow Open Channel Using Experimental and Numerical Methods.	222CE4057	Vangapandu Deepak	Completed
11	Assessment Of Probable Zones Of Agricultural Land Suitability Based On MCDA, Bivariate Statistical and Data Driven Approach Of Krishna District, Andhra Pradesh	222CE4263	Nowdu Sravani	Completed

B.Tech. supervision

Sl no	Title	Roll No	Student Name	Status
1	Prediction of bed load transport in heterogeneous channel using artificial neural networks (ANN)	118CE0055	Anshuman Moharana	Completed
2	Friction factor prediction of heterogeneous channel using artificial neural network	118CE0623	Srujan Dash	Completed

3	Estimation of two-dimensional velocity distribution in open channel flow using shannon's entropy	119CE0029	Siddhant Kumar Jena	Completed
4	Prediction of water quality index using ensemble methods	119CE0022	Biswajeet Biswaprakash	Completed
5	Flow Characteristic Analysis In A Channel With Rigid Vegetation	120CE0081	SAHIL SHRIVASTAV	Completed
6	Flow Velocity Prediction In A Flexible Emergent Vegetated Channel through Machine Learning Techniques	120CE0595	PRATEEK KUMAR	Completed
7	Assessing the irrigation timetable and agricultural water requirements in Kurnool district.	120CE0607	SHIVENDRA SINGH	Completed

Subjects Taught/Teaching

1. Surveying (UG)
2. Building Planning and Drawing (UG)
3. Irrigation Engineering and Water Supply (UG)
4. Estimation and Construction Management (UG)
5. Engineering Mechanics (UG)
6. Fluid Mechanics (UG)
7. Fluvial Hydraulics (PG)
8. Advanced Fluid Mechanics (PG)
9. Engineering Drawing (UG)
10. Fluid Mechanics and Hydraulic Machines Lab (UG)

Awards/Achievement

1. **Best Reviewer Award:** Awarded by HYDRO 2023 International organized by the Department of Civil Engineering, National Institute of Technology, Warangal, under the aegis of Indian Society for Hydraulics (ISH), Pune, during December 21-23, 2023
2. **Prof. R.J. Garde Young Researcher Award:** Awarded by the Indian Society for Hydraulics (ISH) for outstanding research in the field of Hydraulics and Water Resources (2022).

3. **Expert talk** at Siksha 'O' Anusandhan University as a part of 15th SOA Weekly Academic Lecture (SOAWAL), 2022.
4. Achieved **best paper award** in International conference in Water and Environment (ICWE-2021), MANIT Bhopal, 22-23 March, 2021.
5. Achieved **best presenter award** in International Conference on Hydraulics, Water Resources and Ocean Engineering (Hydro-2021), 26-28 March, 2021, NIT Rourkela, Odisha, India
6. **Organized** the HYDRO-2020 International conference at NIT Rourkela, 26-28 March, 2021
7. Delivered an **Expert talk** at short term coarse on Challenges and Opportunities in Civil Engineering Infrastructure (COCEI-2021) organized by IGIT Sarang, Odisha, 2021
8. Invited to act as **Co-chairman** of parallel session in HYDRO 2021 INTERNATIONAL, SVNIT Surat, Dec 2021.
9. **International Travel Support (ITS)** by Department of Science and Technology (DST) for presenting research paper in International conference held at XXXVI International School of Hydraulics at Jachranka, Poland during 23-26 May, 2017
10. Invited at the **International Young Scholar Forum** organized and funded by Sichuan University, China during December, 2017
11. Awarded **MHRD scholarship** for pursuing PhD from IIT Guwahati (July 2015-March 2018)
12. Awarded **MHRD scholarship** during Master of Technology course duration from IIT Guwahati (2013-2015)

Publications (Journal)

1. Shaw, S.K., Sravani, N., Anand, J., Sharma, A., (2025). Assessment of Probable zones of Agricultural Land Suitability Based on MCDM, Probabilistic and Data Driven Approach in Krishna District, India. Environmental Monitoring and Assessment, Accepted for publication
2. Kumar, P., Deepak, V., Sharma, A., (2025). Flow Dynamics and Bed Morphology in a Narrow Channels: A Comparative Study of Experimental and Numerical Approaches to Velocity Distribution. Geomorphology, https://doi.org/10.1016/j.geomorph.2025.109645
3. Shaw, S.K., Sharma, A., (2025). Evaluation and prediction of groundwater water quality for irrigation using Regression and Machine learning models. Water Quality Research Journal, https://doi.org/10.2166/wqrj.2025.075
4. Shaw, S.K., **Sharma, A.,** (2024). Assessment of groundwater quality and suitability for Irrigation purpose using Irrigation Indices, Remote Sensing and GIS approach. Groundwater for Sustainable Development, 26, 101297.
5. Kumar, P., **Sharma, A.,** (2024). Impact of Emergent Vegetation on Three-Dimensional Turbulent Flow Properties and Bed Morphology in a Partially Vegetated Channel. International Journal of Sediment Research, https://doi.org/10.1016/j.ijsrc.2024.10.006

6. Shaw, S.K., **Sharma, A.,** (2024). Assessing groundwater potential zones in Sundargarh district: a comparative study using AHP and FR models. Sustain. Water Resour. Manag. 10, 132 (2024). https://doi.org/10.1007/s40899-024-01111-5
7. Kumar, P., Kumar, A., **Sharma, A.,** (2024). Numerical Modeling of Turbulent Flow Interactions with Vegetation in Channels with Fixed Beds. Modeling Earth Systems and Environment, https://doi.org/10.1007/s40808-024-02025-z
8. Kumar, P., **Sharma, A.,** (2024). "Reynolds number effect on the parameters of turbulent flows over open channels" AQUA Water infrastructure, Ecosystem and Society https://doi.org/10.2166/aqua.2024.056
9. Kumar, P., Ojha, A., & **Sharma, A.** (2023). Reynolds stress anisotropy with higher-order turbulence in flow through rigid emergent vegetation: an experimental Study. *Journal of Hydro-environment Research*, 51, 32-47, https://doi.org/10.1016/j.jher.2023.10.001
10. **Sharma, A.,** Kumar, H., Kumar, B. (2023). "One-Dimensional Velocity Distribution in Seepage Bed Open Channels Using Tsallis Entropy". ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part A: Civil Engineering, DOI: 10.1061/AJRUA6.RUENG-1041
11. Taye, J., **Sharma, A.,** Kumar, B., (2023). "Effect of Downward Seepage on Turbulence and Morphology in Mobile Boundary Sinuous Channel." Physics of Fluids, 35, 016605, DOI: 10.1063/5.013320
12. Shaw, S.K., **Sharma, A.,** Khatua, K.K., Oliveto, G. (2023). An Integrated Approach to Evaluating Crop Water Requirements and Irrigation Schedule for Optimizing Furrow Irrigation Design Parameters in Kurnool District, India. Water 2023, 15, 1801. https://doi.org/10.3390/w15101801
13. Sahoo, S., **Sharma, A**. (2023). "Turbulent flow mechanisms in meandering channels with sediment transport." Water Practice and Technology, 18 (3): 484–500, DOI: 10.2166/wpt.2023.035
14. Saiprasad, B.S., Rao, P.L. **,** Khatua, K.K., **Sharma, A.,** (2023). "Effect of roughness on velocity distribution in diverging compound channels using experimental and numerical approaches." *Arabian Journal of Geosciences*, 16, DOI: 10.1007/s12517-023-11281-9
15. Rao, M.U.M.; Patra, K.C.; Sasmal, S.K.; **Sharma, A.;** Oliveto, G. (2023). "Forecasting of Rainfall across River Basins Using Soft Computing Techniques: The Case Study of the Upper Brahmani Basin (India)". Water 2023, 15, 499. **https://doi.org/10.3390/w15030499**
16. Kumar, P., **Sharma, A.,** (2022). "Experimental investigation of 3D flow properties around emergent rigid vegetation." Ecohydrology, 15 (8), DOI: 10.1002/eco.2474,
17. Saiprasad, B.S., **Sharma, A.,** Khatua, K.K. (2022). "Distribution and prediction of boundary shear in diverging compound channel". Water Resources Management, 36, 4965–4979, 10.1007/s11269-022-03286-y
18. **Sharma, A.,** Jha, V., Roy, M., Kumar, B. (2022). "Velocity distribution in seepage-affected alluvial channels using Renyi entropy." ASCE Journal of Hydrologic Engineering. *27*(6), 04022008, DOI: 10.1061/(asce)he.1943-5584.0002180
19. **Sharma, A.,** Jha, V., Roy, M., Kumar, B. (2022). "One-dimensional velocity distribution in seepage channel using Tsallis and Shannon entropy". Stochastic Environmental Research and Risk Assessment, **36**, 3255–3264, DOI: 10.1007/s00477-022-02192-4

20. **Sharma, A.,** Kumar, B., Oloveto, G. (2022). “Turbulent Flow Structures in Developing and Fully-Developed Flows under the Impact of Downward Seepage.” WATER, 14, 500, **https://doi.org/10.3390/w14030500**
21. Rao, P. L., Saiprasad, B.S., **Sharma, A.,** Khatua, K.K. (2022). “Experimental and numerical analysis of velocity distribution in a compound meandering channel with double layered rigid vegetated flood plains”. Flow Measurement and Instrumentation, 83, 102111, https://doi.org/10.1016/j.flowmeasinst.2021.102111,
22. Chavan, R., **Sharma, A.,** Kumar, B. (2022). “Turbulence Anisotropy around Bridge Piers in Seepage affected Sand Bed Channel” Journal of Turbulence, 23 (1-2), 52-67, DOI: 10.1080/14685248.2021.2009843
23. **Sharma, A.,** Kumar, B. (2022). “Anisotropy properties of turbulence in flow over seepage bed.” ASME Journal of Fluid Engineering, 144(2): 021501. https://doi.org/10.1115/1.4051769
24. **Sharma, A.,** Kumar, B., Oliveto, G. (2021). “Experimental Study on the Near-Bed Flow Characteristics of Alluvial Channel with Seepage.” Applied Sciences, 11 (20), 9619, https://doi.org/ 10.3390/app11209619,
25. **Sharma, A.,**(2021). “Velocity distribution and the moments of turbulent flow over a sand-gravel mixture bed”, Water Resources, 48, 960–966, https://doi.org/10.1134/S0097807821060208,
26. **Sharma, A.,** Kumar, B. (2021). “Comparison of Flow turbulence over a Sand Bed and Gravel Bed Channel”, Water Supply, 21 (8): 4581–4592, https://doi.org/10.2166/ws.2021.201
27. **Sharma, A.;** Huang, L.; Fang, H.; Li, X. (2020), “Effects of hydrodynamic on the mobility of phosphorous induced by sediment resuspension in a seepage affected alluvial channel”, Chemosphere, 260, 127550, doi: 10.1016/j.chemosphere.2020.127550
28. Pandey, M., Valyrakis, M., Qi, M., **Sharma, A.**;Lodhi, A. (2020), “Experimental Assessment and Prediction of Temporal Scour Depth around a Spur Dike”, International Journal of Sediment Research, 36 (1), 17-28, 2021
29. **Sharma, A.;** Kumar, B., Balachandar, R. (2020), “Comparison of flow and morphological characteristics in uniform and non-uniform sand bed channel”, Canadian Journal of Civil Engineering, 47(6), 678-690
30. **Sharma, A.,** Herrera-Granados, O., Kumar, B. (2019). “Bedload transport and temporal variation of non-uniform sediment in seepage affected alluvial channel.”Hydrological Sciences Journal, 64(8), 1001-1012
31. Devi, T.B., **Sharma, A.,** Kumar, B. (2019). “Flow characteristic in a partly vegetated channel with emergent vegetation.” Ecohydrology and Hydrobiology, 19, 93-108
32. **Sharma, A.,** Kumar, B. (2019). “Conditional statistics of Reynolds stress in curvilinear cross section incipient motion channel.” Water Resources, 46(3), 367-376
33. **Sharma, A.,**Mihailovic, D.T., Kumar, B. (2018). “Randomness representation of turbulence in an alluvial channel affected by downward seepage.” Physica A: Statistical Mechanics and its Application, 509, 74-85
34. **Sharma, A.,**Kumar, B. (2018). “High order velocity moments of turbulent boundary layers in seepage affected alluvial channel.” ASME Journal of Fluid Engineering, 140(8), 081204

35. **Sharma, A.,**Kumar, B. (2018). “Sheet flow hydrodynamics over non-uniform sand bed channel” International Journal of Sediment Research, 33(3), 313-326,
36. **Sharma, A.,**Maddirala, A., Kumar, B. (2018). “Modified singular spectrum analysis for despiking acoustic dopplervelocimeter (ADV) Data.”Measurement, 117, 339-346,
37. Shivpure, V., **Sharma, A.,** Kumar, B. (2018) “Scale invariance of power spectrum in sediment transport mechanics” National Academy Science Letters,41 (2), 81-83
38. **Sharma, A.,** Kumar, B. (2018). “Flow resistance in seepage affected alluvial channel.” ISH Journal of Hydraulic Engineering, 26(2), 127-137
39. **Sharma, A.,**Kumar, B. (2018). “Probability distribution functions of turbulence using multiple criteria over non-uniform sand bed channel.” ISH Journal of Hydraulic Engineering, 26(2), 163-172
40. **Sharma, A.,**Kumar, B. (2017). “Structure of Turbulence over non uniform sand bed channel with downward seepage.” European Journal of Mechanics/ B Fluids, 65, 530-541
41. **Sharma, A.,** Kumar, B. (2017). “Double averaged turbulence characteristics of Mobile bed channel with downward seepage.” Canadian Journal of Civil Engineering, 45(2), *135-151*
42. **Sharma, A.,** Devi, T.T., Kumar, B. (2017). “Turbulence in Continuous Flow Surface Aeration Systems.” Water Science and Technology, 75(5), 1148-1157
43. **Sharma, A.,**Kumar, B. (2017). “Boundary Layer Development over Non Uniform Sand Rough Bed Channel.” ISH Journal of Hydraulic Engineering, 25(2), 162-169
44. Devi, T.B., **Sharma, A.,** Kumar, B. (2017). “Studies on emergent flow over vegetative channel bed with downward seepage.” Hydrological Sciences Journal, 62 (3), 408-420
45. Barman, B., **Sharma, A.,** Kumar, B., Sharma, A.K. (2017) “Multiscale characterization of Migrating Sand Wave in Mining Induced Alluvial Channel.” Ecological Engineering 102, 199–206
46. Chavan, R., **Sharma, A.,** Kumar, B. (2017). “Effect of Downward seepage on turbulent characteristics and Bed Morphology around Bridge piers.” Journal of Marine Science and Application, 16(1),60-72
47. **Sharma, A.,**Chavan, R., Kumar, B. (2017). “Multiscale statistical characterizations of migrating pier scour depth in non-uniform sand bed channel.” International Journal of River Basin Management, 15(3), 267-276
48. **Sharma, A.,** Kumar, B. (2016). “Probability distribution function of turbulence in seepage affected alluvial channel.” Fluid Dynamics Research, 49 (1), 015508
49. Devi, T.B., **Sharma, A.,** Kumar, B. (2016). “Turbulence Characteristics of Vegetated Channel with downward Seepage.” ASME Journal of Fluid Engineering, 138(12),121102,
50. **Sharma, A.,** Kumar, B. (2016). “Probability distributions function of turbulent parameter in curvilinear cross section mobile bed channel.” Water Science and Technology,73 (6) 1472-1482
51. **Sharma, A.,** Patel, M., Kumar, B. (2015). “Turbulent parameters and corresponding sediment transport in curved cross section channel”. ISH Journal of Hydraulic Engineering, 21(3), 333-342
52. **Sharma, A.,** Patel, M., Kumar, B. (2015). “Performance Appraisal of Velocity Predictors in channel flow” Indian Water Works, 47

53. Shivpure, V., **Sharma, A.,** Kumar, B. (2016) “Comparison of Bed Shear Stress in Plane and Curvilinear Bed Channel Using Multiple Criteria” Water Resources,43 (1), 79–85

Book/Chapter

1. **Sharma, A.,** Brahma, D., Patel, M., Kumar, B. (2017). “Turbulence scale and mixing length measurement in mobile bed channel” Water Science and Technology Library Series, Springer, Vol. 84, Development of Water Resources in India, ISBN 978-3-319-55124-1.
2. **Sharma A.,**Kumar B. (2018). Higher Order Statistics of Reynolds Shear Stress in Nonuniform Sand Bed Channel. In: Kalinowska M., Mrokowska M., Rowiński P. (eds) Free Surface Flows and Transport Processes. GeoPlanet: Earth and Planetary Sciences. Springer, Cham.ISBN 978-3-319-70914-7
3. **Sharma A.,**Kumar B. (2021)., "Flow Behavior in Surface Aeration System", Lecture Notes in Civil Engineering, ch., innovative trends in hydrological and environmental systems, vol.234, pp.43-48, Springer Nature Singapore 2021, 10.1007/978-981-19-0304-5-4ISBN 978-981-19-0304-5
4. K. C. Patra, K. K. Khatua, S. N. Sahoo, R. Swain, and **A. Sharma,** "HYDRO 2020 International Conference", Proceedings, March 2021 (Edited Book)
5. Hazarika, P.K., Swargiary, A., Sonowal, G., **Sharma, A.** (2023). Generation of Intensity–Duration–Frequency Curve for Tezpur, Assam. In: Timbadiya, P.V., Singh, V.P., Sharma, P.J. (eds) Climate Change Impact on Water Resources. HYDRO 2021. Lecture Notes in Civil Engineering, vol 313. Springer, Singapore. https://doi.org/10.1007/978-981-19-8524-9_33, ISBN: 978-981-19-8524-9
6. Kurmi, R., Iangrai, A., **Sharma, A.** (2023). Review of Pollutant Release and Its Mobility Due to Sediment Erosion in the River Bed. In: Timbadiya, P.V., Patel, P.L., Singh, V.P., Barman, B. (eds) Fluid Mechanics and Hydraulics. HYDRO 2021. Lecture Notes in Civil Engineering, vol 314. Springer, Singapore. https://doi.org/10.1007/978-981-19-9151-6_45
7. Shaw, S. K., **Sharma, A.** and Khatua K.K. (2023), "Irrigation water requirement and irrigation schedule of sugarcane in Kurnool district, Andhra Pradesh", Recent Development in River Corridor Management, ch.26, vol.376, pp.367-379, Springer, lecture notes in civil engineering- vol 376, August 2023, 10.1007/978-981-99-4423-1-26, ISBN: 978-981-99-4423-1
8. Kumar, A., Kumar, P., and **Sharma, A.** (2023) "Structure of turbulent flow in a meander gravel bed channel", Recent Development in River Corridor Management, ch.structure of turbulent flow in a meander gravel bed channel, vol.376, pp.107-116, Springer, lecture notes in civil engineering b, August 2023, 10.1007/978-981-99-4423-1-8, ISBN: 978-981-99-4423-1
9. Ojha, A., Kumar, A., Kumar, P., Sharma, A. (2023). Nature of Bursting Events over a Rigid Bed with Emergent Vegetation. In: Pandey, M., Gupta, A.K., Oliveto, G. (eds) River, Sediment and Hydrological Extremes: Causes, Impacts and Management. Disaster Resilience and Green Growth. Springer, Singapore. https://doi.org/10.1007/978-981-99-4811-6_19, ISBN: 978-981-99-4811-6

Conferences

1. Kumar, P., & Sharma, A. (2024). Flow patterns and Vegetation interactions in a straight channel: An experimental study. The 12th International Conference on Fluvial Hydraulics, River Flow 2024., 2-6 sept, 2024, Liverpool John Moores University, Liverpool, U.K.
2. Kumar, P., & Sharma, A. (2024). Investigation of Hydrodynamic Behavior in a Flume with Emergent Rigid Vegetation. 4th International Conference on River Corridor Research & Management, 7-9 March, 2024, IIT Guwahati, India. (Accepted for book chapter)
3. Kumar, P., Sharma, A., & Barbhuiya, A. K. (2022). Three-Dimensional Flow Characteristics in A Channel with Emergent Rigid Vegetation. International Conference on Sustainable Technologies for River Erosion Alleviation and Management (STREAM-2022), 14-16 Dec, 2022.
4. Paswan, R. K., Kumar, P., & Sharma, A. (2022). Effect of Reynolds number on turbulence flow in heterogeneous channel. 2nd International Conference on River Corridor Research & Management, 7-9 March, 2022, IIT Guwahati, India.
5. Oram K., & Sharma, A. (2022). Optimizing storage tank size of rainwater harvesting (RWH) inside NIT campus. 2nd International Conference on River Corridor Research & Management, 7-9 March, 2022, IIT Guwahati, India.
6. Ajit, P., Meher, M., Dash, S., and **Sharma, A.** (2022). "Friction Factor Prediction of Heterogeneous Channel Using Artificial Neural Network (ANN)", 27th International Conference On Hydraulics, Water Resources, Environmental and Coastal Engineering (HYDRO), Chandigarh.
7. Ojha, A., Kumar, A., Moharana, A., and **Sharma, A.** (2022). "Prediction of Bed Load Transport in Heterogeneous sand bed Channel Using Artificial Neural Networks (ANN)", 27th International Conference On Hydraulics, Water Resources, Environmental and Coastal Engineering (HYDRO), Chandigarh.

8. **Anurag Sharma, Suchismita Sahoo, Mahesh Patel-** Interaction between flow and seepage in an Alluvial Channel, 39th IAHR World Congress, June 19-24, 2022 Granada, Spain. **DOI**: https://doi.org/10.3850/IAHR-39WC252171192022552 ISBN: 978-90-832612-1-8

9. **Anurag Sharma,** Nikhitha Elsa Sam, AsmitaTanwani, HardipsinhJadeja, and Bimlesh Kumar- Experimental Investigation of Friction Factor in Alluvial Channel- *International Conference on Hydraulics, Water Resources and Ocean Engineering (Hydro-2020), 26-28* March, NIT Rourkela, Odisha, India. (Best presenter award)
10. **Anurag Sharma** and Bimlesh Kumar- Sediment transport nature and its celerity in rough bed channel, *International conference in water and environment (ICWE-2021), MANIT Bhopal,* 22-23 March, 2021. (Best paper award)
11. **Anurag Sharma,** Mahesh Patel and Bimlesh Kumar-Effect of Sheet Layer on the Flow Characteristics in an Alluvial Channel-22nd IAHR APD Congress 2020, Sapporo, Japan
12. Mahesh Patel**, Anurag Sharma,** and Bimlesh Kumar- Impact of downward seepage on plane bed alluvial channels-22nd IAHR APD Congress 2020, Sapporo, Japan

13. **Anurag Sharma** and Bimlesh Kumar- Flow Structure over Uniform and Non-uniform Sand Bed Channel,E-proceedings of the 38th IAHR World Congress September 1-6, 2019, Panama City, Panama **doi:10.3850/38WC092019-0431**
14. **Anurag Sharma** and Bimlesh Kumar- Turbulent Characteristics of Flow over Non-Uniform Sand Bed Channel, 37th*IAHR World Congress*, August 13th-18th, 2017, Kuala-Lumpur, Malaysia. **ISSN 1562-6865 (Online)-ISSN 1063- 7710 (Print)**
15. **Anurag Sharma**, Vindhyawasini Prasad and Bimlesh Kumar- Estimation of Turbulence Properties of Acoustic Doppler Velocimeter Data Contaminated with Spikes.*4th National Conference on Water, Environment and Society (NCWES 2017),* March 16th-18th, 2017, JNTU, Hyderabad, India.**ISBN: 978-93-5230-182-9**
16. **Anurag Sharma** and Bimlesh Kumar- Double Averaged Turbulence Structure of Flow with Seepage. *Fluid Mechanics and Fluid Power (FMFP 2016),*December 15th-17th, 2016, MNNIT Allahabad, India, ***ISBN: 978-93-5267-408-4***
17. **Anurag Sharma** and Bimlesh Kumar- Multiple Methods for Comparison of Bed Shear Stress in Plane and Curvilinear Cross Section Mobile Bed Channel, 21st*International Conference on Hydraulics, Water Resources and River Engineering,* December 8th-10th,Hydro-2016 CWPRS Pune, India.
18. **Anurag Sharma**, Mahesh Patel and Bimlesh Kumar- Turbulent Characteristics in Curvilinear Cross Section Mobile Bed Channel, *36th IAHR World Congress*, June 28th-July 3rd, 2015, The Hague, Netherlands.
19. **Anurag Sharma** and Bimlesh Kumar- Probability Distributions Function of Turbulent Parameter in Curvilinear Cross Section Mobile Bed Channel. *20th International Conference on Hydraulics, Water Resources and River Engineering,* December 17th-19th,Hydro-2015, IIT Roorkee, India.
20. ThokchomBebina Devi, **Anurag Sharma,**Sumit Kumar Mahto, Rishabh Daga and Bimlesh Kumar- Flow Characteristics in a Vegetative Channel with Downward Seepage, *20th International Conference on Hydraulics, Water Resources and River Engineering,* December 17th-19th,Hydro-2015, IIT Roorkee, India.
21. VarshaShivpure, **Anurag Sharma,**Pankaj Meena, Bimlesh Kumar **-** Soft Computing Approach to Analyse the Parameters of Bed-Material Load Transport.*3rd Assam Water Conference,* Assam Water Research and Management Institute, Basistha, Guwahati, 6 Feb- 7 Feb, 2015
22. Jaideep Sehrawat, **Anurag Sharma,** BimleshKumar - Developing Nomo grams for a Tunnel Connecting Two Reservoir", National Conference on Water and its Sustainability in Mining and Other Environment: Vision 2050 (WSME 2014), March 28-29, 2014.