

Chandranath Chatterjee

Professor (HAG) (Hydrology and Water Resources Engineering)

*Department of Agricultural and Food Engineering
Indian Institute of Technology Kharagpur
West Bengal, 721 302*

*Phone: +91-3222-283158
Email: cchatterjee@agfe.iitkgp.ac.in
cchatiit@gmail.com
Mob: 9932584565*

EDUCATION (Details in Annexure-I)

- Ph.D. - Indian Institute of Technology Kharagpur- India, 1999, Water Management
- M.Tech. - Indian Institute of Technology Kharagpur- India, 1994, Soil & Water Conservation Engineering
- B.Tech. - Orissa University of Agriculture and Technology Bhubaneswar – India, 1992, Agricultural Engineering

EXPERIENCE

Professor (Higher Administrative Grade (HAG)), Department of Agricultural and Food Engg.
Indian Institute of Technology Kharagpur, India, August 2023 - to date

Professor, Department of Agricultural and Food Engineering
Indian Institute of Technology Kharagpur, India, October 2014 – August 2023

Associate Professor, Department of Agricultural and Food Engineering
Indian Institute of Technology Kharagpur, India, June 2010 – October 2014

Assistant Professor, Department of Agricultural and Food Engineering
Indian Institute of Technology Kharagpur, India, May 2004 – June 2010

Alexander-von-Humboldt Research Fellow, Institute of Earth and Environmental Sciences
Potsdam University, Germany, May 2005 – July 2006 (Research Area: Flood Modeling)

Scientist ‘C’, Centre for Flood Management Studies, Patna
National Institute of Hydrology, Roorkee, India, February 2000 – May 2004

Scientist ‘B’, Centre for Flood Management Studies, Patna
National Institute of Hydrology, Roorkee, India, February 1997 – February 2000

RESEARCH INTERESTS

- ✓ Flood inundation modeling, hazard and risk analysis
- ✓ Flood forecasting using AI/ML tools
- ✓ Impact of climate change on flood risk

- ✓ Design flood estimation using deterministic and probabilistic approaches
- ✓ Geo-informatics for hydrological/hydraulic modeling
- ✓ Application of Unmanned Aerial Vehicle (UAV) for crop condition monitoring

AWARDS AND HONORS

- ✓ Fellow of National Academy of Agricultural Sciences (NAAS), 2024
- ✓ Alexander von Humboldt Foundation Fellowship, Germany, 2005
- ✓ Union Ministry of Water Resources – Department of Irrigation Award of the Institution of Engineers (India), 2004
- ✓ Certificate of Merit of the Institution of Engineers (India), 2002
- ✓ DST SERC Fast Track Proposal for Young Scientists, 2002
- ✓ Reddy award from Indian Society of Agril. Engineers (ISAE) for best M.Tech. Thesis, 1994
- ✓ University gold medal in B.Tech. (Agricultural Engineering), OUAT, Bhubaneswar, 1992

COURSES TAUGHT (*Details of Teaching Feedback in Annexure-II*)

Average Teaching Feedback: 4.33

(On a scale of 1 to 5: 1 = Poor, 2 = Fair, 3 = Good, 4 = Very good, 5 = Excellent)

Courses at Undergraduate level:

- ✓ Land and Water Resources Engineering (AG31003)
- ✓ Land and Water Resources Engineering Laboratory (AG39003)
- ✓ GIS Principles & Applications (AG40003)

Courses at Postgraduate level:

- ✓ Geo-informatics for Land & Water Resources (AG60203)
- ✓ Geo-informatics for Land & Water Resources Laboratory (AG69039)
- ✓ Water Resources System Analysis (AG60042)
- ✓ Systems Approach in Agriculture (AG60064)
- ✓ Mathematical Models in Hydrology (AG60041)
- ✓ Hydrology & Water Resources Engineering Laboratory (AG69019)
- ✓ River Basin Management (WM60004)
- ✓ Remote Sensing for Land & Water Resources (AG60099)

E-Courses:

Developed the following e-courses for B. Tech. (Agricultural Engineering) under ICAR-NAIP (New Delhi)

- ✓ Remote Sensing and GIS Application 3 (2 + 1)
- ✓ Watershed Hydrology 3 (2 + 1)

PUBLICATIONS (*Details in Annexure-III*)

Google Scholar Citations:

Citations	6163
h-index	44
i10-index	82

- ✓ 112 papers in Refereed journals
- ✓ 140 papers in Proceedings of seminars/conferences
- ✓ 2 E-Textbooks and 1 Edited Volume
- ✓ 1 Copyright
- ✓ 9 Book chapters
- ✓ 15 Technical reports

Top 20 Significant Publications:

1. Khatun, A., Jena, P.P., Sahoo, B., **Chatterjee, C.** (2025) “Forecasting flood inundations in the dam-regulated Mahanadi River delta using integrated hydrologic-hydrodynamic-deep learning model”, Environmental Modelling and Software, Elsevier, 191, DOI: 10.1016/j.envsoft.2025.106523 (Impact Factor: 4.8)
2. Khatun, A., Sahoo, B., **Chatterjee, C.** (2023) “Two novel error-updating model frameworks for short-to-medium range streamflow forecasting using bias-corrected rainfall inputs: Development and comparative assessment”, Journal of Hydrology, Elsevier, 618, DOI: 10.1016/j.jhydrol.2023.129199 (Impact Factor: 6.708)
3. Barbetta, S., Sahoo, B., Bonaccorsi, B., Nanda, T., **Chatterjee, C.**, Moramarco, T., Todini, E. (2023) “Addressing effective real-time forecasting inflows to dams through predictive uncertainty estimate”, Journal of Hydrology, Elsevier, DOI: DOI: 10.1016/j.jhydrol.2023.129512 (Impact Factor: 6.708)
4. Khatun, A., Ganguli, P., Bisht, D.S., **Chatterjee, C.**, Sahoo, B. (2022) “Understanding the impacts of predecessor rain events on flood hazard in a changing climate”, Hydrological Processes, John Wiley and Sons Ltd., 36(2), e14500, DOI: 10.1002/hyp.14500 (Impact Factor: 3.565)
5. Bisht, D. S., Mohite, A. R., Jena, P. P., Khatun, A., **Chatterjee, C.**, Raghuwanshi, N. S., Singh, R., Sahoo, B. (2020) “Impact of climate change on streamflow regime of a large Indian river basin using a novel monthly hybrid bias correction technique and a conceptual

- modeling framework”, *Journal of Hydrology*, Elsevier, 590, DOI: 10.1016/j.jhydrol.2020.125448 (Impact Factor: 4.5)
6. Nanda, T., Sahoo, B., **Chatterjee, C.** (2019) “Enhancing real-time streamflow forecasts with wavelet-neural network based error-updating schemes and ECMWF meteorological predictions in Variable Infiltration Capacity model”, *Journal of Hydrology*, Elsevier, 575, 890-910, DOI: 10.1016/j.jhydrol.2019.05.051 (Impact Factor: 3.727)
 7. Beria, H., Nanda, T., Bisht, D. S., **Chatterjee, C.** (2017) “Does the GPM mission improve the systematic error component in satellite rainfall estimates over TRMM? An evaluation at a pan-India scale”, *Hydrology and Earth System Sciences*, European Geosciences Union, 21:6117-6134. DOI: 10.5194/hess-21-6117-2017 (Impact Factor: 5.064)
 8. Nanda, T., Sahoo, B., **Chatterjee, C.** (2017). “Enhancing the applicability of Kohonen Self-Organizing Map (KSOM) estimator for gap-filling in hydrometeorological timeseries data”, *Journal of Hydrology*, Elsevier, DOI: 10.1016/j.jhydrol.2017.03.072 (Impact Factor: 3.73)
 9. Bisht, D. S., **Chatterjee, C.**, Kalakoti, S., Upadhyay, P., Sahoo, M., and Panda, A. (2016). “Modeling urban floods and drainage using SWMM and MIKE URBAN: a case study”, *Natural Hazards*, Springer, 1-28, DOI: 10.1007/s11069-016-2455-1 (Impact Factor: 1.72)
 10. Nanda, T., Sahoo, B., Beria, H., **Chatterjee, C.** (2016). “A wavelet-based non-linear autoregressive with exogenous inputs (WNARX) dynamic neural network model for real-time flood forecasting using satellite-based rainfall products”, *Journal of Hydrology*, Elsevier, 539, 57-73, DOI: 10.1016/j.jhydrol.2016.05.014 (Impact Factor: 3.05)
 11. Samantaray, D., **Chatterjee, C.**, Singh, R., Kumar, P., and Panigrahy, S. (2015), “Flood risk modeling for optimal rice planning for delta region of Mahanadi river basin in India”, *Natural Hazards*, Springer, 76(1), 347-372, DOI: 10.1007/s11069-014-1493-9 (Impact Factor: 1.72)
 12. Kneis, D., **Chatterjee, C.**, and Singh, R. (2014), “Evaluation of TRMM rainfall estimates over a large Indian river basin (Mahanadi)”, *Hydrology and Earth System Sciences*, European Geosciences Union, 18(7), 2493-2502, DOI: 10.5194/hess-18-2493-2014 (Impact factor: 3.59)
 13. Jena, P. P., **Chatterjee, C.**, Pradhan, G., and Mishra, A. (2014), “Are recent frequent high floods in Mahanadi basin in eastern India due to increase in extreme rainfalls?”, *Journal of Hydrology*, Elsevier, 517, 847-862, DOI: 10.1016/j.jhydrol.2014.06.021 (Impact factor: 2.96)
 14. Mani, P., **Chatterjee, C.**, and Kumar, R. (2014), “Flood hazard assessment with multi-parameter approach derived from coupled 1D and 2D hydrodynamic flow model”, *Natural Hazards*, Springer, 70(2), 1553–1574, DOI: 10.1007/s11069-013-0891-8 (Impact factor: 1.64)
 15. Tiwari, M. K., **Chatterjee, C.** (2010), “Development of an accurate and reliable hourly flood forecasting model using wavelet–bootstrap–ANN (WBANN) hybrid approach”, *Journal of*

Hydrology, Elsevier, 394(3), 458-470, DOI: 10.1016/j.jhydrol.2010.10.001 (Impact factor: 2.96)

16. Tiwari, M. K. and **Chatterjee, C.** (2010), “Uncertainty assessment and ensemble flood forecasting using bootstrap based artificial neural networks (BANNs)”, Journal of Hydrology, Elsevier, 382(1), 20-33, DOI: 10.1016/j.jhydrol.2009.12.013 (Impact factor: 2.96)
17. Patro, S., **Chatterjee, C.**, Singh, R., and Raghuwanshi, N. S. (2009), “Hydrodynamic modelling of a large flood prone river system in India with limited data”, Hydrological Processes, John Wiley and Sons Ltd., 23(19), 2774-2791, DOI: 10.1002/hyp.7375 (Impact factor: 2.50)
18. Mukerji, A., **Chatterjee, C.** and Raghuwanshi, N. S. (2009), “Flood forecasting using ANN, Neuro-Fuzzy and Neuro-GA models”, Journal of Hydrologic Engineering, American Society of Civil Engineers, 14(6), 647-652, DOI: 10.1061/(ASCE)HE.1943-5584.0000040 (Impact factor: 1.38)
19. **Chatterjee, C.**, Förster, S., and Bronstert, A., (2008), “Comparison of hydrodynamic models of different complexities to model floods with emergency storage areas”, Hydrological Processes, John Wiley and Sons Ltd., 22(24), 4695-4709, DOI: 10.1002/hyp.7079 (Impact factor: 2.50)
20. Förster, S., **Chatterjee, C.**, and Bronstert, A., (2008), “Hydrodynamic simulation of the operational management of a proposed flood emergency storage area at the middle Elbe River using MIKE 11”, River Research Applications, John Wiley and Sons Ltd., 24(7), 900-913, DOI: 10.1002/rra.1090 (Impact factor: 2.43)

SPONSORED RESEARCH and **CONSULTANCY PROJECTS** (*Details in Annexure-IV*)

- ✓ 7 Ongoing and 21 completed research projects
- ✓ 11 completed and 1 ongoing consultancy projects

The total grant as PI/Co-PI till now amounts to more than Rs. 138 million. **Funding agencies include** European Commission, Europe; DFG, Germany; Department of Science and Technology, New Delhi; Ministry of Water Resources, New Delhi; Ministry of Human Resources Development, New Delhi; Ministry of Agriculture and Farmers’ Welfare, New Delhi; Ministry of Electronics and Information Technology, New Delhi; Indian Space Research Organization, Bangalore; Space Application Centre, Ahmedabad; Indian Council of Agricultural Research, New Delhi; ITRA, Mumbai; DAAD, Germany; The World Bank, New Delhi; National Thermal Power Corporation, Kahalgaon; Soil Conservation Dept., Damodar Valley Corporation, Hazaribag; Govt. of Andhra Pradesh, Karnataka and Odisha, India; Greenthink Ventures Pvt. Ltd., Kolkata; Ashoka Buildcon Limited, Karnataka; National Tea Research Foundation, Kolkata, Texmaco Rail and Engineering Ltd., Agarpara, Kolkata.

Significant Projects as Principal Investigator:

1. “Development and management of surface water resources and soil moisture in different agro-ecological regions of India using Geo-informatics and Nano Technology” sponsored by ICAR-Indian Institute of Water Management, Bhubaneswar; Duration: 5 years (09-11-2021 to 08-11-2026); Fund: Rs. 52.50 lakhs
2. “Impact of climate change on flood risk” sponsored by DST, Ministry of Science and Technology, New Delhi; Duration: 5 years (30-03-2017 to 29-03-2022); Fund: Rs. 58.51 lakhs
3. “An integrated autonomous UAV and WSN – based system for crop management and crop condition monitoring” sponsored by MHRD and MoA&FW, New Delhi; Duration: 5 years (08-02-2017 to 31-03-2022); Fund: Rs. 195 lakhs
4. “Development of optimal crop planning model based on flood risk” sponsored by ICAR, MoA&FW, New Delhi; Duration: 1 year (13-01-2016 to 31-03-2017); Fund: Rs. 34.925 lakhs
5. “Flood inundation zoning for different return periods in Mahanadi river basin” sponsored by INCSW, Ministry of Water Resources, New Delhi; Duration: 6 years (01-04-2011 to 31-03-2017); Fund: Rs. 36 lakhs
6. “Flood risk modelling using satellite remote sensing data for optimal crop planning” sponsored by ISRO, Bangalore; Duration 3 years (2008-2011); Fund: Rs. 10.78 lakhs
7. “Probable maximum flood estimation for Nagarjunasagar Dam” sponsored by Govt. of Andhra Pradesh; Duration: 2 years (2009-2011); Fund: Rs. 29.10 lakhs

RESEARCH GUIDANCE (Details in Annexure-V)

- ✓ Guidance at doctoral level: 15 completed; 6 in progress
- ✓ Guidance at master’s level: 73 completed; 2 in progress
- ✓ Guidance at bachelor’s level: 35 completed

COLLABORATIONS and VISITS ABROAD (Details in Annexure-VI)

Collaborations:

1. Research collaboration with “Institute of Earth-and Environmental Sciences, University of Potsdam, Germany” (Collaborators: Prof. Axel Bronstert, Dr. Gerd Bürger, Ms Lisei Koehn) in a project funded by Deutsche Forschungsgemeinschaft (DFG) – (i) Publication of research papers in high impact journals, (ii) Development of collaborative research proposals, and (iii) Developed a flood forecasting model for Mahanadi river basin
2. Research collaboration with “Department of Biological Systems Engineering, Virginia Tech, Blacksburg, Virginia, USA (Collaborator: Prof. V Sridhar) – (i) Publication of research papers in high impact journals, (ii) Development of collaborative research proposals

Visits Abroad:

1. Institute for Environmental Science and Geography, University of Potsdam, Germany during May 2005 to July 2006 for a renewed research visit to carry out research in the area of 'Flood Risk Management' as an Alexander-von-Humboldt Research Fellow.
2. Institute of Earth and Environmental Science, Potsdam University, Germany during May 2005 to July 2006 for conducting Post-Doctoral research in the area of 'Flood Modeling' as an Alexander-von-Humboldt Research Fellow
3. Civil and Environmental Engineering Section (GITS Sediment Transport Research Group), Universitat Politècnica de Catalunya, Barcelona, Spain during April 2006 for conducting Post-Doctoral research in the area of 'Flood Modeling' as an Alexander-von-Humboldt Research Fellow

CONFERENCES/SHORT-TERM COURSES ORGANIZED (Details in Annexure-VII)

1. International Conference on "Digital Transformation for Growth—Empowering Agro-Rural Economies Towards Sustainable Viksit Bharat @2047" at Indian Institute of Technology Kharagpur, Kharagpur, India, 4-5, March 2025.
2. International Conference on "Food Security and Environmental Sustainability (FSES-2009)" at IIT Kharagpur in 2009.
3. International Short-term course on "Advanced Training in Land and Water Resources Engineering" for BE students of Tribhuvan University, Nepal from 20 to 22 June, 2019 (Sponsorship Amount: Rs. 3.4 lakh)
4. International Short-term course (International Summer and Winter Term (ISWT)) on "Modeling River Catchment Interactions" from 01 to 12 June, 2015 (Sponsorship Amount: Rs. 3 lakh)
5. International Short-term course (International Summer and Winter Term (ISWT)) on "Geospatial Technologies in Hydrological Modelling" from 16 to 27 June, 2014 (Sponsorship Amount: Rs. 3 lakh)

ADMINISTRATIVE ACTIVITIES (Details in Annexure- VIII)

1. Professor-in-Charge, Institute's Water Works, 2016-2019
2. Professor-in-Charge, Institute's Sanitation, 2016-2019
3. Assistant Warden, Meghnad Saha Hall of Residence, 2007-2009
4. Chairman, Departmental Under Graduate (UG) Committee, 2020 to date

5. Prof-in-Charge, Agricultural Engineering Society (AES), 2008-2020

OTHER PROFESSIONAL ACTIVITIES (*Details in Annexure- IX*)

1. Member of High Level Expert Committee on “Flood Management” formed by ‘Flood Management Improvement Support Centre (FMISC)’ Water Resources Department, Govt. of Bihar, 2011-2014
2. Convener of the Committee for revising syllabus of ‘Agricultural Engineering and Technology’ discipline for Agricultural Research Service (ARS) examination conducted by the Indian Council of Agricultural Research (ICAR), 2022
3. Member of the following professional bodies:
 - ✓ Life Member: International Association of Hydrological Sciences (IAHS), Wallingford, U.K. (Membership No. 2318)
 - ✓ Life Member: Indian Society of Remote Sensing (ISRS), Dehradun, India (Membership No. L-1872)
 - ✓ Life Member: Indian Society for Hydraulics (ISH), Pune, India (Membership No. LM/351)
 - ✓ Life Member: Indian Association of Hydrologists (IAH), Roorkee, India (Membership No. LM-1064)

(Chandranath Chatterjee)

Annexure-I

Educational Qualifications:

Degree	Institution	Year	Specialization	Division	% Marks	Rank
Ph.D.	IIT Kharagpur	1999	Hydrometry	-	-	-
M.Tech.	IIT Kharagpur	1994	Soil & Water Cons. Engg.	-	9.52/ 10	First in Specialization
B.Tech.	CAET, OUAT, Bhubaneswar	1992	Agricultural Engg.	First (Hons)	8.65/ 10	Univ. Gold Medalist
H.S.	BJB College, Bhubaneswar	1988	PCM, English, Stats	First	88.9%	-
AISSE	D. M. School, Bhubaneswar	1986	Science, Engl., Maths	First	76.4%	-

Annexure-II

Teaching Feedback

Average Teaching Feedback: 4.33 (Since 2009 when ERP based feedback became operational)

(On a scale of 1 to 5: 1 = Poor, 2 = Fair, 3 = Good, 4 = Very good, 5 = Excellent)

Subject-wise Year-wise Teaching Feedback:

#	Session	Semester	Subject Number	Subject Name	Credits	No. of Students	Feedback Response
1	2009-2010	Autumn	AG31003	Land & Water Resources Engineering	4	21	4.33
2	2009-2010	Autumn	AG39003	Land & Water Resources Engineering Lab.	2	21	4.50
3	2009-2010	Spring	AG60064	Systems Approach in Agriculture	4	6	4.00
4	2009-2010	Spring	AG60042	Water Resources System Analysis	4	14	4.50
5	2010-2011	Autumn	AG31003	Land & Water Resources Engineering	4	26	3.96
6	2010-2011	Autumn	AG39003	Land & Water Resources Engineering Lab.	2	22	3.91
7	2010-2011	Autumn	AG60203	Geo-Informatics for Land & Water Resources	4	16	4.50
8	2010-2011	Autumn	AG69039	Geo-Informatics for Land & Water Resources Laboratory	2	12	4.85
9	2010-2011	Spring	WM60004	River Basin Management	4	5	4.40
10	2010-2011	Spring	AG60064	Systems Approach in Agriculture	4	7	4.86
11	2011-2012	Autumn	AG31003	Land & Water Resources Engineering	4	42	4.46
12	2011-2012	Autumn	AG39003	Land & Water Resources Engineering Lab.	2	38	4.42
13	2011-2012	Autumn	AG60203	Geo-Informatics for Land & Water Resources	4	24	4.46
14	2011-2012	Autumn	AG69039	Geo-Informatics for Land & Water Resources Laboratory	2	14	4.50
15	2011-2012	Spring	WM60004	River Basin Management	4	7	4.57
16	2011-2012	Spring	AG60064	Systems Approach in Agriculture	4	13	3.43
17	2011-2012	Spring	AG60042	Water Resources System Analysis	4	21	4.43
18	2012-2013	Autumn	AG31003	Land & Water Resources Engineering	4	28	4.23

19	2012-2013	Autumn	AG39003	Land & Water Resources Engineering Lab.	2	25	4.04
20	2012-2013	Spring	AG60064	Systems Approach in Agriculture	4	9	4.78
21	2013-2014	Autumn	AG31003	Land & Water Resources Engineering	4	64	3.84
22	2013-2014	Autumn	AG39003	Land & Water Resources Engineering Lab.	2	59	4.12
23	2013-2014	Autumn	AG60203	Geo-Informatics for Land & Water Resources	4	19	4.84
24	2013-2014	Autumn	AG69039	Geo-Informatics for Land & Water Resources Laboratory	2	14	4.86
25	2013-2014	Autumn	AG60099	Remote Sensing for Land and Water Resources	4	22	4.59
26	2013-2014	Spring	AG60064	Systems Approach in Agriculture	4	12	4.42
27	2013-2014	Spring	AG60042	Water Resources System Analysis	4	14	4.65
28	2014-2015	Autumn	AG60099	Remote Sensing for Land And Water Resources	4	13	4.38
29	2014-2015	Autumn	AG60203	Geo-Informatics for Land & Water Resources	4	22	4.64
30	2014-2015	Autumn	AG69039	Geo-Informatics for Land & Water Resources Laboratory	2	18	4.61
31	2014-2015	Spring	AG60064	Systems Approach in Agriculture	4	35	4.23
32	2014-2015	Spring	AG60042	Water Resources System Analysis	4	22	4.40
33	2015-2016	Autumn	AG60203	Geo-Informatics for Land & Water Resources	4	20	4.26
34	2015-2016	Autumn	AG69039	Geo-Informatics for Land & Water Resources Laboratory	2	17	4.04
35	2015-2016	Spring	AG60042	Water Resources System Analysis	4	18	3.67
36	2015-2016	Spring	AG60064	Systems Approach in Agriculture	4	41	3.66
37	2016-2017	Autumn	AG60203	Geo-Informatics for Land & Water Resources	4	29	4.48
38	2016-2017	Autumn	AG69039	Geo-Informatics for Land & Water Resources Laboratory	2	19	4.60
39	2016-2017	Spring	AG60042	Water Resources System Analysis	4	21	4.39
40	2016-2017	Spring	AG60064	Systems Approach in Agriculture	4	15	4.78
41	2017-2018	Autumn	AG31003	Land & Water Resources Engineering	4	61	4.21
42	2017-2018	Autumn	AG60203	Geo-Informatics for Land & Water Resources	4	27	4.29

43	2017-2018	Autumn	AG69039	Geo-Informatics for Land & Water Resources Laboratory	2	19	4.19
44	2017-2018	Spring	AG60042	Water Resources System Analysis	4	21	4.27
45	2017-2018	Spring	AG60064	Systems Approach in Agriculture	4	29	3.98
46	2018-2019	Autumn	AG31003	Land & Water Resources Engineering	4	60	4.11
47	2018-2019	Autumn	AG39003	Land & Water Resources Engineering Lab.	2	62	3.91
48	2018-2019	Spring	AG60042	Water Resources System Analysis	4	19	4.64
49	2018-2019	Spring	AG60064	Systems Approach in Agriculture	4	26	4.55
50	2019-2020	Autumn	AG31003	Land & Water Resources Engineering	4	55	4.15
51	2019-2020	Autumn	AG39003	Land & Water Resources Engineering Lab.	2	58	3.85
52	2020-2021	Autumn	AG60203	Geo-Informatics for Land & Water Resources	4	23	4.44
53	2020-2021	Spring	AG60042	Water Resources System Analysis	4	19	4.86
54	2020-2021	Spring	AG60064	Systems Approach in Agriculture	4	24	4.13
55	2021-2022	Autumn	AG31003	Land & Water Resources Engineering	4	22	3.75
56	2021-2022	Autumn	AG39003	Land & Water Resources Engineering Lab.	2	22	3.63
57	2021-2022	Spring	AG60042	Water Resources System Analysis	4	4	4.75
58	2021-2022	Spring	AG60064	Systems Approach in Agriculture	4	29	4.35
59	2022-2023	Autumn	AG31003	Land & Water Resources Engineering	4	67	4.45
60	2022-2023	Autumn	AG39003	Land & Water Resources Engineering Lab.	2	69	4.46
61	2022-2023	Spring	AG60042	Water Resources System Analysis	4	18	4.56
62	2022-2023	Spring	AG60064	Systems Approach in Agriculture	4	47	4.41
63	2023-2024	Autumn	AG31003	Land & Water Resources Engineering	4	73	4.30
64	2023-2024	Autumn	AG39003	Land & Water Resources Engineering Lab.	2	73	4.44
65	2023-2024	Spring	AG60042	Water Resources System Analysis	4	18	4.40
66	2023-2024	Spring	AG60064	Systems Approach in Agriculture	4	71	4.29

67	2024-2025	Autumn	AG31003	Land & Water Resources Engineering	4	87	4.29
68	2024-2025	Autumn	AG39003	Land & Water Resources Engineering Lab.	2	73	4.40
69	2024-2025	Spring	AG60042	Water Resources System Analysis	4	19	4.46
70	2025-2026	Autumn	AG31003	Land & Water Resources Engineering	4	81	3.75
71	2025-2026	Autumn	AG39003	Land & Water Resources Engineering Lab.	2	77	3.48

Annexure-III

Publications

Google Scholar Citations (<https://scholar.google.com/citations?user=3wMSIbIAAAAJ>)

Citations	6163
h-index	44
i10-index	82

(A) Refereed Journals: 112

1. Khatun, A., **Chatterjee, C.**, Sahoo, B., Jena, P.P. (2025) “A modelling framework to assess and manage the impacts of deltaic flooding on agriculture in a changing climate”, Hydrological Processes, Wiley Online Library, 39(12), DOI: 10.1002/hyp.70349 (Impact Factor: 3.2)
2. Khatun, A., Jena, P.P., Sahoo, B., **Chatterjee, C.** (2025) “Forecasting flood inundations in the dam-regulated Mahanadi River delta using integrated hydrologic-hydrodynamic-deep learning model”, Environmental Modelling and Software, Elsevier, 191, DOI: 10.1016/j.envsoft.2025.106523 (Impact Factor: 4.8)
3. Ganguli, P., Nithila Devi, N., Apel, H., Vorogushyn, S., Jena, P.P., **Chatterjee, C.**, Merz, B. (2025) “Growing pluvial flood hazard and exposure from heatwave-preconditioned rainfall extremes in Chennai metropolitan area, India”, Geophysical Research Letters, American Geophysical Union, DOI: 10.1029/2025GL115795 (Impact Factor: 4.6)
4. Mondal, K., Gupta, V., **Chatterjee, C.**, Singh, R. (2025) “Assessing climate change impacts on the WEF nexus: A case study of water availability, thermal energy production, and rice yield in the Kangsabati river basin”, Energy and Climate Change, Elsevier, 6, DOI: 10.1016/j.egycc.2025.100221 (Impact Factor: 5.6)
5. Mohite, A.R., Khatun, A., **Chatterjee, C.**, Singh, R., Kumar, R. (2025) “Improved flood forecasting using numerical weather prediction meteorological forecasts with integrated rainfall-runoff and hydrodynamic model”, Water Resources Management, Springer, DOI: 10.1007/s11269-025-04178-7 (Impact Factor: 3.9)
6. Tateh, S., Khose, S.B., Mailapalli, D.R., **Chatterjee, C.**, Raghuwanshi, N.S. (2025). “Prediction of tea leaf characteristics using spectral data and machine learning techniques”, Geocarto International, Taylor and Francis, 40 (1), DOI: 10.1080/10106049.2025.2542949 (Impact Factor: 3.5)
7. Swain, S.S., Mishra, A., **Chatterjee, C.** (2024) “Assessment of basin-scale concurrent dry and wet extreme dynamics under multimodel CORDEX climate scenarios”,

International Journal of Climatology, Wiley Online Library, DOI: 10.1002/joc.8677 (Impact Factor: 3.609)

8. Jena, P.P., **Chatterjee, C.**, Kumar, R., Khatun, A. (2024) “Flood hazard assessment using hydrodynamic modeling under severity-frequency based changing flood regime”, *Water Resources Management*, Springer, 38, pages 4589–461, DOI: 10.1007/s11269-024-03880-2 (Impact Factor: 3.9)
9. Swain, S.S., Mishra, A., **Chatterjee, C.** (2024) “Time-varying evaluation of compound drought and hot extremes in machine learning–predicted ensemble CMIP5 future climate: a multivariate multi-index approach”, *Journal of Hydrologic Engineering*, American Society of Civil Engineers, 29(2), DOI: 10.1061/JHYEFF.HEENG-6026 (Impact Factor: 2.4)
10. Biswal, S., **Chatterjee, C.**, Mailapalli, D.R. (2024) “Assessment of damage due to grain discoloration disease in paddy crop using high-resolution UAV imagery”, *Journal of the Indian Society of Remote Sensing*, Springer, 1-17, DOI: 10.1007/s12524-024-02012-y (Impact Factor: 2.2)
11. Sarkar, S., Dey, A., Pradhan, R., Sarkar, U.M., **Chatterjee, C.**, Mondal, A., Mitra, P. (2024) “Crop yield prediction using multimodal Meta-Transformer and Temporal Graph Neural Networks”, *IEEE Transactions on AgriFood Electronics*, IEEE, 2(2), 545-553, DOI: 10.1109/TAFE.2024.3438330
12. Biswal, S., Pathak, N., **Chatterjee, C.**, Mailapalli, D.R. (2024) “Estimation of aboveground biomass from spectral and textural characteristics of paddy crop using UAV-multispectral images and machine learning techniques”, *Geocarto International*, 39 (1), DOI: 10.1080/10106049.2024.2364725 (Impact Factor: 3.3)
13. Mondal, K., **Chatterjee, C.**, Singh, R. (2023) “Examining the coupling and coordination of water-energy-food nexus at a sub-national scale in India – Insights from the perspective of Sustainable Development Goals”, *Sustainable Production and Consumption*, Elsevier, 43, 140-154, DOI: 10.1016/j.spc.2023.10.020 (Impact Factor: 12.1)
14. Khatun, A., Sahoo, B., **Chatterjee, C.** (2023) “Two novel error-updating model frameworks for short-to-medium range streamflow forecasting using bias-corrected rainfall inputs: Development and comparative assessment”, *Journal of Hydrology*, Elsevier, 618, DOI: 10.1016/j.jhydrol.2023.129199 (Impact Factor: 6.708)
15. Barbetta, S., Sahoo, B., Bonaccorsi, B., Nanda, T., **Chatterjee, C.**, Moramarco, T., Todini, E. (2023) “Addressing effective real-time forecasting inflows to dams through predictive uncertainty estimate”, *Journal of Hydrology*, Elsevier, DOI: DOI: 10.1016/j.jhydrol.2023.129512 (Impact Factor: 6.708)

16. Swain, S.S., Kumar, S.B., Mishra, A., **Chatterjee, C.** (2023) “Sensitive or resilient catchment?: A Budyko-based modeling approach for climate change and anthropogenic stress under historical to CMIP6 future scenarios”, *Journal of Hydrology*, Elsevier, DOI: 10.1016/j.jhydrol.2023.129651 (Impact Factor: 6.708)
17. Bera, A., Misra, S., **Chatterjee, C.** (2023) “Channel-state information-driven data rate optimization for multi-UAV IoT networks”, *IEEE Internet of Things Journal*, IEEE, DOI: 10.1109/JIOT.2023.3280964 (Impact factor: 10.238)
18. Biswal, S., **Chatterjee, C.**, Mailapalli, D.R. (2023) "Damage assessment due to wheat lodging using UAV-based multispectral and thermal imageries", *Journal of the Indian Society of Remote Sensing*, Springer, DOI: 10.1007/s12524-023-01680-6 (Impact Factor: 1.894)
19. Khatun, A., **Chatterjee, C.**, Sahu, G., Sahoo, B. (2023) “A novel smoothing-based long short-term memory framework for short-to medium-range flood forecasting”, *Hydrological Sciences Journal*, Taylor & Francis Online, DOI: 10.1080/02626667.2023.2173012 (Impact Factor: 3.942)
20. Mondal, K., **Chatterjee, C.**, Singh, R. (2023) “An analytical framework for state level water-energy-food nexus analysis in India: Insight from implemented policies”, *Environmental Science & Policy*, Elsevier, 141, 33-49, DOI: 10.1016/j.envsci.2022.12.018 (Impact Factor: 6.424)
21. Kumar, U., Rashmi, Srivastava, A., Kumari, N., **Chatterjee, C.**, Raghuwanshi, N. S. (2023) “Evaluation of standardized MODIS-Terra satellite-derived evapotranspiration using Genetic Algorithm for better field applicability in a tropical river basin”, *Journal of the Indian Society of Remote Sensing*, Springer, 51, 1001–1012, DOI: 10.1007/s12524-023-01675-3 (Impact Factor: 1.894)
22. Mondal, K., Tantuway, R. B., **Chatterjee, C.**, Singh, R. (2023) “Development of a water-energy-food nexus model for multiscale studies”, *Irrigation and Drainage*, John Wiley and Sons Ltd., DOI: 10.1002/ird.2800 (Impact Factor: 1.424)
23. Khose, S.B., Mailapalli, D.R., Biswal, S., **Chatterjee, C.** (2022) “UAV-based multispectral image analytics for generating crop coefficient maps for rice”, *Arabian Journal of Geosciences*, Springer, 15 (22), 1681, 1-17, DOI: 10.1007/s12517-022-10961-2 (Impact Factor: 1.827)
24. Saha, R., Misra, S., Chakraborty, A., **Chatterjee, C.**, Deb, P.K. (2022) “Data-centric client selection for federated learning over distributed edge networks”, *IEEE Transactions on Parallel and Distributed Systems*, IEEE, 34 (2), 675-686, DOI: 10.1109/TPDS.2022.3217271 (Impact Factor: 3.757)
25. Khatun, A., Sahoo, B., **Chatterjee, C.** (2022) “Assessment of enhanced Kohonen self-organizing map, quantile mapping and copula-based bias-correction approaches for

- constructing basin-scale rainfall forecasts”, *Hydrological Sciences Journal*, Taylor & Francis Online, 67(12), 1860-1875, DOI: 10.1080/02626667.2022.2109972 (Impact Factor: 3.942)
26. Bera, A., Misra, S., **Chatterjee, C.**, Mao, S. (2022) “CEDAN: Cost-effective data aggregation for UAV-enabled IoT networks”, *IEEE Transactions on Mobile Computing*, IEEE, DOI: 10.1109/TMC.2022.3172444 (Impact Factor: 6.075)
 27. Khatun, A., Ganguli, P., Bisht, D.S., **Chatterjee, C.**, Sahoo, B. (2022) “Understanding the impacts of predecessor rain events on flood hazard in a changing climate”, *Hydrological Processes*, John Wiley and Sons Ltd., 36(2), e14500, DOI: 10.1002/hyp.14500 (Impact Factor: 3.565)
 28. Ganguli, P., Nandamuri, Y.R., **Chatterjee, C.** (2022) “Understanding flood regime changes of the Mahanadi River”, *ISH Journal of Hydraulic Engineering*, Taylor & Francis Ltd., DOI: 10.1080/09715010.2022.2068356 (Impact Factor: 1.70)
 29. Patel, A., Jena, P.P., Khatun, A., **Chatterjee, C.** (2022) “Improved Cartosat-1 based DEM for flood inundation modeling in the delta region of Mahanadi River basin, India”, *Journal of the Indian Society of Remote Sensing*, Springer, 1-15, DOI: 10.1007/s12524-022-01525-8 (Impact Factor: 1.089)
 30. Bera, A., Misra, S., **Chatterjee, C.** (2021) "PRISM: Priority-Aware Service Availability in Multi-UAV Networks for IoT Applications", *IEEE Internet of Things Journal*, IEEE, DOI: 10.1109/JIOT.2021.3116140 (Impact Factor: 9.936)
 31. Goswami, S., Choudhary, S.S., **Chatterjee, C.**, Mailapalli, D. R., Mishra, A., Raghuwanshi, N. S. (2021) “Estimation of nitrogen status and yield of rice crop using unmanned aerial vehicle equipped with multispectral camera”, *Journal of Applied Remote Sensing*, SPIE, 15(4), 042407-1-18, DOI: 10.1117/1.JRS.15.042407 (Impact Factor: 1.53)
 32. Choudhary, S.S., Biswal, S., Saha, R., **Chatterjee, C.** (2021) “A non-destructive approach for assessment of nitrogen status of wheat crop using unmanned aerial vehicle equipped with RGB camera”, *Arabian Journal of Geosciences*, Springer, 14 (17), 1-15, DOI: 10.1007/s12517-021-08139-3 (Impact Factor: 1.827)
 33. Swain, S.S., Mishra, A., **Chatterjee, C.**, Sahoo, B. (2021) “Climate-changed versus land-use altered streamflow: A relative contribution assessment using three complementary approaches at a decadal time-spell”, *Journal of Hydrology*, Elsevier, 596, DOI: 10.1016/j.jhydrol.2021.126064 (Impact Factor: 4.5)
 34. Kumar, U., Srivastava, A., Kumari, N., Sahoo, B., **Chatterjee, C.**, Raghuwanshi, N. S. (2021) “Evaluation of spatio-temporal evapotranspiration using satellite-based approach and lysimeter in the agriculture dominated catchment”, *Journal of the Indian Society of Remote Sensing*, Springer, DOI: 10.1007/s12524-021-01367-w (Impact Factor: 1.089)

35. Kumar, U., Rashmi, **Chatterjee, C.**, Raghuwanshi, N.S. (2021) “Comparative evaluation of simplified surface energy balance index-based actual ET against lysimeter data in a tropical river basin”, *Sustainability*, MDPI, 13(24), 13786, DOI: 10.3390/su132413786 (Impact Factor: 3.473)
36. Saha, R., Chakraborty, A., Misra, S., Das, S.K., **Chatterjee, C.** (2021) “DLSense: Distributed learning-based smart virtual sensing for precision agriculture”, *IEEE Sensors Journal*, IEEE Sensors Council, DOI: 10.1109/JSEN.2020.3048593 (Impact Factor: 3.98)
37. Maza, M., Srivastava, A., Bisht, D.S., Raghuwanshi, N.S., Bandyopadhyay, A., **Chatterjee, C.**, Bhadra, A. (2020) “Simulating hydrological response of a monsoon dominated reservoir catchment and command with heterogeneous cropping pattern using VIC model”, *Journal of Earth System Science*, Springer, 129(1), 1-16, DOI: 10.1007/s12040-020-01468-z (Impact Factor: 1.423)
38. Bhadoriya, U.P.S., Mishra, A., Singh, R., **Chatterjee, C.** (2020) “Implications of climate change on water storage and filling time of a multipurpose reservoir in India” *Journal of Hydrology*, Elsevier, 590, DOI: 10.1016/j.jhydrol.2020.125542 (Impact Factor: 4.5)
39. Bisht, D.S., Mohite, A.R., Jena, P.P., Khatun, A., **Chatterjee, C.**, Raghuwanshi, N. S., Singh, R., Sahoo, B. (2020) “Impact of climate change on streamflow regime of a large Indian river basin using a novel monthly hybrid bias correction technique and a conceptual modeling framework”, *Journal of Hydrology*, Elsevier, 590, DOI: 10.1016/j.jhydrol.2020.125448 (Impact Factor: 4.5)
40. Swain, S.S., Mishra, A., Sahoo, B., **Chatterjee, C.** (2020) “Water scarcity-risk assessment in data-scarce river basins under decadal climate change using a hydrological modelling approach”, *Journal of Hydrology*, Elsevier, 590, DOI: 10.1016/j.jhydrol.2020.125260 (Impact Factor: 4.5)
41. Ramteke, G., Singh, R., **Chatterjee, C.** (2020) “Assessing impacts of conservation measures on watershed hydrology using MIKE SHE model in the face of climate change”, *Water Resources Management*, Springer, 34(13), 4233-4252, DOI: 10.1007/s11269-020-02669-3 (Impact Factor: 3.54)
42. Kumar, U., Sahoo, B., **Chatterjee, C.**, Raghuwanshi, N.S. (2020) “Evaluation of Simplified Surface Energy Balance Index (S-SEBI) Method for Estimating Actual Evapotranspiration in Kangsabati Reservoir Command Using Landsat 8 Imagery”, *Journal of the Indian Society of Remote Sensing*, Springer, 48(10), 1421-1432, DOI: 10.1007/s12524-020-01166-9 (Impact Factor: 1.089)
43. Gusain, A., Mohanty, M.P., Ghosh, S., **Chatterjee, C.**, Karmakar, S. (2020) “Capturing transformation of flood hazard over a large river basin under changing climate using a

top-down approach”, *Science of the Total Environment*, Elsevier, 726, 1-17, DOI: 10.1016/j.scitotenv.2020.138600 (Impact Factor: 5.589)

44. Mishra, A., Waghaye, A., **Chatterjee, C.**, Rautaray, S.K. (2020) “Rain water resource management in mango orchards through micro-catchments”, *Sustainable Water Resources Management*, Springer Nature, DOI: 10.1007/s40899-020-00404-9 (Impact Factor: 1.63)
45. Bera, A., Misra, S., **Chatterjee, C.** (2020) "QoE analysis in cache-enabled multi-UAV networks", *IEEE Transactions on Vehicular Technology*, IEEE, DOI: 10.1109/TVT.2020.2985933 (Impact Factor: 5.33)
46. Jacob, X. V., Bisht, D. S., **Chatterjee, C.**, Raghuwanshi, N.S. (2020) “Hydrodynamic modeling for flood hazard assessment in a data scarce region: a case study of Bharathapuzha river basin”, *Environmental Modeling and Assessment*, Springer International Publishing, 25, 97–114, DOI: 10.1007/s10666-019-09664-y (Impact Factor: 1.253)
47. Ganguli, P., Nandamuri, Y.R., **Chatterjee, C.** (2020) “Analysis of persistence in the flood timing and the role of catchment wetness on flood generation in a large river basin in India”, *Theoretical and Applied Climatology*, Springer, DOI: 10.1007/s00704-019-02964-z (Impact Factor: 2.72)
48. Nanda, T., Sahoo, B., **Chatterjee, C.** (2019) “Enhancing real-time streamflow forecasts with wavelet-neural network based error-updating schemes and ECMWF meteorological predictions in Variable Infiltration Capacity model”, *Journal of Hydrology*, Elsevier, 575, 890-910, DOI: 10.1016/j.jhydrol.2019.05.051 (Impact Factor: 3.727)
49. Bisht, D.S., Sridhar, V., Mishra, A., **Chatterjee, C.**, Raghuwanshi, N. S. (2019) “Drought characterization over India under projected climate scenario”, *International Journal of Climatology*, Royal Meteorological Society, 39(4), 1889-1911, DOI: 10.1002/joc.5922 (Impact Factor: 3.601)
50. Srivastava, A., Sahoo, B., Raghuwanshi, N.S., **Chatterjee, C.**, (2018) “Modelling the dynamics of evapotranspiration using Variable Infiltration Capacity model and regionally calibrated Hargreaves approach”, *Irrigation Science*, Springer, DOI: 10.1007/s00271-018-0583-y (Impact Factor: 1.65)
51. Bisht, D.S., **Chatterjee, C.**, Raghuwanshi, N.S., Sridhar, V. (2018) “Spatio-temporal trends of rainfall across Indian river basins”, *Theoretical and Applied Climatology*, Springer, 132(1-2), 419-436, DOI: 10.1007/s00704-017-2095-8 (Impact Factor: 2.32)
52. Beria, H., Nanda, T., Bisht, D.S., **Chatterjee, C.** (2017) “Does the GPM mission improve the systematic error component in satellite rainfall estimates over TRMM? An evaluation at a pan-India scale”, *Hydrology and Earth System Sciences*, European

Geosciences Union, 21:6117-6134, DOI: 10.5194/hess-21-6117-2017 (Impact Factor: 5.064)

53. Bisht, D. S., **Chatterjee, C.**, Raghuwanshi, N.S., Sridhar, V. (2017) “An analysis of precipitation climatology over Indian urban agglomeration”, *Theoretical and Applied Climatology*, Springer, DOI: 10.1007/s00704-017-2200-z (Impact Factor: 2.32)
54. Nanda, T., Sahoo, B., **Chatterjee, C.** (2017). “Enhancing the applicability of Kohonen Self-Organizing Map (KSOM) estimator for gap-filling in hydrometeorological timeseries data”, *Journal of Hydrology*, Elsevier, DOI: 10.1016/j.jhydrol.2017.03.072 (Impact Factor: 3.73)
55. Kumar, R., Mani, P., **Chatterjee, C.**, Patra, J.P. (2017) “Flood disaster risk management for a project site in India under the changing climate”, *Journal of Indian Water resources Society*, IWRS, 37(3), 37-41.
56. Bisht, D.S., **Chatterjee, C.**, Kalakoti, S., Upadhyay, P., Sahoo, M., and Panda, A. (2016). “Modeling urban floods and drainage using SWMM and MIKE URBAN: a case study”, *Natural Hazards*, Springer, 1-28, DOI: 10.1007/s11069-016-2455-1 (Impact Factor: 1.72)
57. Nanda, T., Sahoo, B., Beria, H., **Chatterjee, C.** (2016). “A wavelet-based non-linear autoregressive with exogenous inputs (WNARX) dynamic neural network model for real-time flood forecasting using satellite-based rainfall products”, *Journal of Hydrology*, Elsevier, 539, 57-73, DOI: 10.1016/j.jhydrol.2016.05.014 (Impact Factor: 3.05)
58. Jena, P.P., Panigrahi, P., and **Chatterjee, C.** (2016). “Assessment of Cartosat-1 DEM for modeling floods in data scarce regions”, *Water Resources Management*, Springer, 30(3), 1293-1309, DOI: 10.1007/s11269-016-1226-9 (Impact Factor: 2.6)
59. Samantaray, D., **Chatterjee, C.**, Singh, R., Kumar, P., and Panigrahy, S. (2015), “Flood risk modeling for optimal rice planning for delta region of Mahanadi river basin in India”, *Natural Hazards*, Springer, 76(1), 347-372, DOI: 10.1007/s11069-014-1493-9 (Impact Factor: 1.72)
60. Kumar, S., Tiwari, M. K., **Chatterjee, C.**, and Mishra, A. (2015), “Reservoir inflow forecasting using ensemble models based on neural networks, wavelet analysis and bootstrap method”, *Water Resources Management*, Springer, 29(13), 4863–4883, DOI: 10.1007/s11269-015-1095-7 (Impact Factor: 2.6)
61. Kumar, A., Singh, R., Jena, P.P., **Chatterjee, C.**, and Mishra, A. (2015). “Identification of the best multi-model combination for simulating river discharge”, *Journal of Hydrology*, Elsevier, 525, 313-325, DOI: 10.1016/j.jhydrol.2015.03.060 (Impact Factor: 3.05)

62. Kumar, R., Goel, N.K., **Chatterjee, C.**, and Nayak, P.C. (2015), “Regional flood frequency analysis using soft computing techniques”, *Water Resources Management*, Springer, 29(6), 1965-1978, DOI: 10.1007/s11269-015-0922-1 (Impact Factor: 2.6)
63. Kneis, D., **Chatterjee, C.**, and Singh, R. (2014), “Evaluation of TRMM rainfall estimates over a large Indian river basin (Mahanadi)”, *Hydrology and Earth System Sciences*, European Geosciences Union, 18(7), 2493-2502, DOI: 10.5194/hess-18-2493-2014 (Impact Factor: 3.59)
64. Jena, P.P., **Chatterjee, C.**, Pradhan, G., and Mishra, A. (2014), “Are recent frequent high floods in Mahanadi basin in eastern India due to increase in extreme rainfalls?”, *Journal of Hydrology*, Elsevier, 517, 847-862, DOI: 10.1016/j.jhydrol.2014.06.021 (Impact factor: 2.96)
65. Sehgal, V., Tiwari, M.K., and **Chatterjee, C.** (2014), “Wavelet bootstrap multiple linear regression based hybrid modeling for daily river discharge forecasting”, *Water Resources Management*, Springer, 28(10), 2793–2811, DOI: 10.1007/s11269-014-0638-7 (Impact Factor: 2.46)
66. Sehgal, V., Sahay, R.R., and **Chatterjee, C.** (2014), “Effect of utilization of discrete wavelet components on flood forecasting performance of wavelet based ANFIS models”, *Water Resources Management*, Springer, 28(6), 1733–1749, DOI: 10.1007/s11269-014-0584-4 (Impact Factor: 2.46)
67. Sehgal, V., and **Chatterjee, C.** (2014), “Auto updating wavelet based MLR models for monsoonal river discharge forecasting”, *International Journal of Civil Engineering Research*, Research India Publications, 5(4), 401-406.
68. Mani, P., **Chatterjee, C.**, and Kumar, R. (2014), “Flood hazard assessment with multi-parameter approach derived from coupled 1D and 2D hydrodynamic flow model”, *Natural Hazards*, Springer, 70(2), 1553–1574, DOI: 10.1007/s11069-013-0891-8 (Impact Factor: 1.64)
69. Sardar, B., Singh, A.K., Raghuwanshi, N.S., and **Chatterjee, C.** (2014), “Hydrological modeling to identify and manage critical erosion prone areas for improving reservoir life: A case study of Barakar basin”, *Journal of Hydrologic Engineering*, American Society of Civil Engineers, 19(1), 196-204, DOI: 10.1061/(ASCE)HE.1943-5584.0000749 (Impact Factor: 1.38)
70. Kant, A., Suman, P.K., Giri, B.K., Tiwari, M.K., **Chatterjee, C.**, Nayak, P.C., and Kumar, S. (2013), “Comparison of multi-objective evolutionary neural network, adaptive neuro-fuzzy inference system and bootstrap-based neural network for flood forecasting”, *Neural Computing and Applications*, Springer, 23(1), S231–S246, DOI 10.1007/s00521-013-1344-8 (Impact Factor: 1.76)

71. Rath, S., Nayak, P.C., and **Chatterjee, C.** (2013), “Hierarchical neuro-fuzzy model for real time flood forecasting”, *International Journal of River Basin Management*, Taylor & Francis, 11(3), 253-268, DOI:10.1080/15715124.2013.798329 (Impact Factor: 2.20)
72. Tiwari, M.K., Song, K.Y., **Chatterjee, C.**, and Gupta, M.M. (2013), “Improving reliability of river flow forecasting using neural networks, wavelets and self-organising maps”, *Journal of Hydroinformatics*, IWA Publishing, 15(2), 486-502, DOI: 10.2166/hydro.2012.130 (Impact Factor: 1.15)
73. Mishra, A., Singh, R., Raghuwanshi, N.S., **Chatterjee, C.**, and Froebrich, J. (2013), “Spatial variability of climate change impacts on yield of rice and wheat in the Indian Ganga Basin”, *Science of the Total Environment*, Elsevier, 468–469, S132-S138, DOI: 10.1016/j.scitotenv.2013.05.080 (Impact Factor: 3.26)
74. Tiwari, M.K., Song, K.Y., **Chatterjee, C.**, and Gupta, M.M. (2012), “River-flow forecasting using higher-order neural networks”, *Journal of Hydrologic Engineering*, American Society of Civil Engineers, 17 (5), 655-666, DOI: 10.1061/ (ASCE)HE.1943-5584.0000486 (Impact Factor: 1.38)
75. Tiwari, M.K., and **Chatterjee, C.** (2011), “A new wavelet—bootstrap—ANN hybrid model for daily discharge forecasting”, *Journal of Hydroinformatics*, IWA Publishing, 13(3), 500-519, DOI: 10.2166/hydro.2010.142 (Impact Factor: 1.15)
76. Tiwari, M.K., **Chatterjee, C.** (2010), “Development of an accurate and reliable hourly flood forecasting model using wavelet–bootstrap–ANN (WBANN) hybrid approach”, *Journal of Hydrology*, Elsevier, 394(3), 458-470, DOI: 10.1016/j.jhydrol.2010.10.001 (Impact Factor: 2.96)
77. Tiwari, M.K. and **Chatterjee, C.** (2010), “Uncertainty assessment and ensemble flood forecasting using bootstrap based artificial neural networks (BANNs)”, *Journal of Hydrology*, Elsevier, 382(1), 20-33, DOI: 10.1016/j.jhydrol.2009.12.013 (Impact Factor: 2.96)
78. Patro, S., **Chatterjee, C.**, Singh, R., and Raghuwanshi, N.S. (2009), “Hydrodynamic modelling of a large flood prone river system in India with limited data”, *Hydrological Processes*, John Wiley and Sons Ltd., 23(19), 2774-2791, DOI: 10.1002/hyp.7375 (Impact Factor: 2.50)
79. Patro, S., **Chatterjee, C.**, Mohanty, S, Singh, R., and Raghuwanshi, N.S. (2009), “Flood inundation modeling using MIKE FLOOD and remote sensing data”, *Journal of the Indian Society of Remote Sensing*, Springer, 37, 107-118, DOI: 10.1007/s12524-009-0002-1 (Impact Factor: 1.089)
80. Lohani, A.K., **Chatterjee, C.**, Kumar, R., and Singh, R.D. (2009), “Management model for waterlogging and drainage congestion problem of Mokama tal area”, *Journal of the*

Institution of Engineers (India): Civil Engineering Division, Springer, 90, 28-32, Part of ISBN: 0020336X (Impact Factor: 0.96)

81. Mukerji, A., **Chatterjee, C.** and Raghuwanshi, N.S. (2009), “Flood forecasting using ANN, Neuro-Fuzzy and Neuro-GA models”, Journal of Hydrologic Engineering, American Society of Civil Engineers, 14(6), 647-652, DOI: 10.1061/(ASCE)HE.1943-5584.0000040 (Impact Factor: 1.38)
82. Mishra, A., and **Chatterjee, C.** (2009), “Temporal changes in rainfall occurrence and distribution in West Midnapore district of West Bengal”, Journal of Indian Water Resources Society, IWRS, 29(1), 38-48.
83. **Chatterjee, C.**, Förster, S., and Bronstert, A., (2008), “Comparison of hydrodynamic models of different complexities to model floods with emergency storage areas”, Hydrological Processes, John Wiley and Sons Ltd., 22(24), 4695-4709, DOI: 10.1002/hyp.7079 (Impact Factor: 2.50)
84. Förster, S., **Chatterjee, C.**, and Bronstert, A., (2008), “Hydrodynamic simulation of the operational management of a proposed flood emergency storage area at the middle Elbe River using MIKE 11”, River Research Applications, John Wiley and Sons Ltd., 24(7), 900-913, DOI: 10.1002/rra.1090 (Impact Factor: 2.43)
85. Kumar, R., **Chatterjee, C.**, Singh, R.D., Lohani, A.K., and Kumar, S., (2007), “Runoff estimation for an ungauged catchment using geomorphological instantaneous unit hydrograph (GIUH)”, Hydrological Processes, John Wiley and Sons Ltd., 21, 1829-1840, DOI: 10.1002/hyp.6318 (Impact Factor: 2.50)
86. Kumar, R., Singh, R.D., **Chatterjee, C.**, Mani, P., and Panigrahy, N., (2007), “Advance deterministic and probabilistic modeling for design flood estimation”, Journal of the Institution of Engineers (India): Civil Engineering Division, Springer, 88, 13-19, Part of ISBN: 03731995 (Impact Factor: 0.96)
87. Sahoo, B., **Chatterjee, C.**, Raghuwanshi, N.S., Singh, R., and Kumar, R., (2006), “Flood estimation by GIUH based Clark and Nash models”, Journal of Hydrologic Engineering, American Society of Civil Engineers, 11(6), 515-525, DOI: 10.1061/(ASCE)1084-0699(2006)11:6(515) (Impact Factor: 1.38)
88. Kumar R. and **Chatterjee C.**, (2006), Closure to discussion on “Regional flood frequency analysis using L-moments for North Brahmaputra region of India” by V. V. Srinivas and A. Ramachandra Rao, Journal of Hydrologic Engineering, American Society of Civil Engineers, 11(4), 380-382, DOI: 10.1061/(ASCE)1084-0699(2006)11:4(380) (Impact Factor: 1.38)
89. **Chatterjee C.**, Kumar R., Chakravorty B, Lohani A.K. and Kumar S., (2005), “Integrating remote sensing and GIS techniques with groundwater flow modeling for

assessment of waterlogged areas” *Water Resources Management*, Springer, 19, 539-554, DOI: 10.1007/s11269-005-2071-4 (Impact Factor: 2.46)

90. Kumar R. and **Chatterjee C.**, (2005), “Regional flood frequency analysis using L-moments for North Brahmaputra region of India”, *Journal of Hydrologic Engineering*, American Society of Civil Engineers, 10(1), 1-7, DOI: 10.1061/(ASCE)1084-0699(2005)10:1(1) (Impact Factor: 1.38)
91. Sahoo B., **Chatterjee C.** and Raghuwanshi N.S., (2005), “Runoff prediction in ungauged basins at different basin map scales”, *Hydrology Journal of IAH*, IAH Roorkee, 28(3-4), 45-58.
92. Kumar R., **Chatterjee C.**, Singh R.D., Lohani A.K. and Kumar, S. (2004), “GIUH based Clark and Nash models for runoff estimation for an ungauged basin and their uncertainty analysis”, *International Journal of River Basin Management*, Taylor & Francis, 2(4), 281-290, DOI: 10.1080/15715124.2004.9635238 (Impact Factor: 2.20)
93. Lohani A. K, Ghosh N.C. and **Chatterjee C.**, (2004), “Development of a management model for a surface waterlogged and drainage congested area”, *Water Resources Management*, Springer, 18(5), 497-518, DOI: 10.1023/B:WARM.0000049144.34212.ca (Impact Factor: 2.46)
94. Kumar, R., **Chatterjee, C.**, Kumar, S., Lohani, A.K., and Singh, R.D. (2003). “Development of regional flood frequency relationships using L-moments for Middle Ganga Plains (Subzone 1-f) of India”, *Water Resources Management*, Springer, 17(4), 243-257, DOI: 10.1023/A:1024770124523 (Impact factor: 2.46)
95. Kumar, R., **Chatterjee, C.**, and Kumar, S. (2003). “Regional flood formulas using L-moments for small watersheds of Sone subzone of India”, *Journal of Applied Engineering in Agriculture*, American Society of Agricultural Engineers, 19(1), 47-53, DOI: 10.13031/2013.12736 (Impact Factor: 0.985)
96. **Chatterjee, C.**, Kumar, R., and Mani, P. (2003). “Delineation of surface waterlogged areas in parts of Bihar using IRS-1C LISS-III data”, *Journal of the Indian Society of Remote Sensing*, Springer, 31(1), 57-65, DOI: 10.1007/BF03030752 (Impact Factor: 1.089)
97. Kumar, R., **Chatterjee, C.**, Panigrahi, N., Patwari, B.C., and Singh, R.D. (2003). “Development of regional flood formula using L-moments for North Brahmaputra river system”, *Journal of the Institution of Engineers (India): Civil Engineering Division*, Springer, 84, 57-63, Part of ISBN: 03731995 03731995 (Impact Factor: 0.96)
98. Kumar, R., **Chatterjee, C.**, Kumar, S., and Lohani, A. K. (2003). “Use of L-moments in development of regional flood frequency relationships for gauged and ungauged catchments”, *Indian Journal of Power and River Valley Development*, 53(5/6), 86-92.

99. Mani, P., Kumar, R., and **Chatterjee, C.** (2003). "Erosion study of a part of Majuli river-island using remote sensing data", *Journal of the Indian Society of Remote Sensing*, Springer, 31(1), 11-18, DOI: 10.1007/bf03030747 (Impact Factor: 1.089)
100. Kumar, S., Kumar, R., Chakravorty, B., **Chatterjee, C.**, and Pandey, N.G. (2003). "An artificial neural network approach for flood forecasting", *Journal of the Institution of Engineers (India): Computer Engineering Division*, Springer, 84, 52-55, Part of ISBN: 09710469 09710469 (Impact Factor: 0.96)
101. Kumar, R., **Chatterjee, C.**, Singh, R.D., Lohani, A.K., and Nema, R.K. (2002). "Flood estimation for ungauged catchments using GIS and GIUH-based Nash model", *Asian-Pacific Remote Sensing and GIS Journal*, Economic and Social Commission for Asia and the Pacific, United Nations, New York, 15, December, 11-20.
102. **Chatterjee, C.**, Singh, R., Kar, S.K. (2002). "Discharge characteristics of chimney weir under free-flow conditions", *Journal of Irrigation and Drainage Engineering*, American Society of Civil Engineers, 128(3), 175-179, DOI: 10.1061/(ASCE)0733-9437(2002)128:3(175) (Impact Factor: 0.80)
103. Kumar, R., **Chatterjee, C.**, Lohani, A.K., Kumar, S., and Singh, R.D. (2002). "Sensitivity analysis of the GIUH based Clark model for a catchment", *Water Resources Management*, Springer, 16, 263-278, DOI: 10.1023/A:1021920717410 (Impact Factor: 2.46)
104. **Chatterjee, C.**, Jha, R., Lohani, A.K., Kumar, R., and Singh, R. (2002). "Estimation of SCS curve numbers for a basin using rainfall-runoff data", *ISH Journal of Hydraulic Engineering*, Taylor & Francis, 8(1), 40-49, DOI: 10.1080/09715010.2002.10514705 (Impact Factor: 1.699)
105. Kumar, R., **Chatterjee, C.**, Kumar, S., Lohani, A.K., and Singh, R.D. (2002). "Estimation of direct surface runoff hydrograph for a basin using HEC-1 Package and Nash model", *Journal of the Institution of Engineers (India): Civil Engineering Division*, Springer, 82, 181-185, Part of ISBN: 03731995 (Impact Factor: 0.96)
106. Kumar, R., **Chatterjee, C.**, Kumar, S., and Upadhyay, P. (2002). "Development of regional flood formulae using L-moments for gauged and ungauged catchments of South Bihar and Jharkhand", *Water and Energy International Journal*, Central Board of Irrigation and Power, 59(2), April-June, 52-69, Part of ISBN: 0972057X (Impact Factor: 0.21)
107. Lohani, A.K., **Chatterjee, C.**, and Kumar, R. (2002). "Estimation of waterlogging and water storage capacity of Mokama Tal area in Bihar using remote sensing and GIS", *GIS India*, Hyderabad, May, 10-14.
108. Kumar, R., **Chatterjee, C.**, Kumar, S., Jain, S.K., Lohani, A.K., and Singh, R.D. (2001). "Intercomparison of responses of HEC-1 package and Nash model", *Hydrology Journal of IAH*, IAH Roorkee, 24(3), September, 13-24.

109. **Chatterjee, C.**, Jha, R., Lohani, A.K., Kumar, R., and Singh, R. (2001). "Runoff curve number estimation for a basin using remote sensing and GIS", *Asian-Pacific Remote Sensing and GIS Journal*, Economic and Social Commission for Asia and the Pacific, United Nations, New York, 14, December, 1-7.
110. Kumar, R., Lohani, A.K., Kumar, S., **Chatterjee, C.**, and Nema, R.K. (2001). "GIS based morphometric analysis of Ajay river basin upto Sarath gauging site of South Bihar", *Journal of Applied Hydrology*, Association of Hydrologists of India, XIV(4), 45-54.
111. **Chatterjee, C.**, Singh, R., Kar, S.K., Panda, S.N., and Bohara, S.L. (1998). "Flow characteristics of chimney weir under submergence", *Journal of Irrigation and Drainage Engineering*, American Society of Civil Engineers, 124(2), 96-101, DOI: 10.1061/(ASCE)0733-9437(1998)124:2(96) (Impact Factor: 0.80)
112. **Chatterjee, C.**, Singh, R., and Satyanarayana, T. (1997). "Discharge characteristics of chimney weir", *Journal of the Institution of Engineers (India): Agricultural Engineering Division*, Springer, 77, 190-194 (Impact Factor: 0.96)

(B) Proceedings of Seminars/Conferences/Symposium/Workshop: 140

1. Singh, R., Mondal, K. and **Chatterjee, C.** (2026). "A web-based modelling framework for the water-energy-food nexus with integrated policy analysis", EGU General Assembly 2026, Copernicus Meetings, Vienna, Austria, 3-8 May, 2026, EGU26-86, DOI: 10.5194/egusphere-egu26-86.
2. **Chatterjee, C.**, Khatun, A. and Sahoo, B. (2026). "Exploring possibilities to reduce climate change induced flood risk and crop production losses using hydrodynamic modelling", EGU General Assembly 2026, Copernicus Meetings, Vienna, Austria, 3-8 May, 2026, DOI: 10.5194/egusphere-egu26-7289.
3. Mohanty, S., Reddy, P. G., Sahoo, B. and **Chatterjee, C.** (2026). "A coupled SWAT-MCDM framework for delineating potential rainwater harvesting zones in a tropical semi-arid basin", EGU General Assembly 2026, Copernicus Meetings, Vienna, Austria, 3-8 May 2026, EGU26-3082, DOI: 10.5194/egusphere-egu26-3082.
4. Karmakar, S., Voit, P. and **Chatterjee, C.** (2026) "Quantification of precipitation extremeness over a large Indian River Basin using Weather Extremity Indices", EGU General Assembly 2026, Copernicus Meetings, Vienna, Austria, 3-8 May 2026, EGU26-17294; DOI: 10.5194/egusphere-egu26-17294.
5. Dey, A., Sarkar, S., Sri Harsha, VVS, **Chatterjee, C.**, Mondal, A. and Mitra, P. (2025) "Yieldfusion: enhancing yield prediction with transfer learning", IGARSS 2025 - 2025 IEEE International Geoscience and Remote Sensing Symposium, Brisbane, Australia, 03-08 August 2025, pp. 1065-1069, DOI: 10.1109/IGARSS55030.2025.11243959.

6. Sarkar, S., Amin, S., Dey, A., **Chatterjee, C.** and Mitra, P. (2025) "GKANs-KNN: Enhancing crop recommendations with Deep Learning", IGARSS 2025 - 2025 IEEE International Geoscience and Remote Sensing Symposium, Brisbane, Australia, 03-08 August 2025, pp. 3703-3707, DOI: 10.1109/IGARSS55030.2025.11242733.
7. **Chatterjee, C.**, Khatun, A. and Sahoo, B. (2025) "Simulating daily flood inundation forecasts for a large flood-prone river delta in eastern India", EGU General Assembly 2025, Copernicus Meetings, Vienna, Austria and Online, 27 April-2 May 2025; DOI: 10.5194/egusphere-egu25-11793.
8. Ganguli P., Nallasami N.D., Apel H., Vorogushyn S., Jena P.P., **Chatterjee C.** and Merz, B. (2025) "Physics-based assessment of pluvial flood hazard and exposure from hourly rainfall extremes preconditioned by heatwaves", International Conference (IAHS25) organized by 'International Association of Hydrological Sciences (IAHS)' from 5-10 October 2025 at IIT Roorkee, India.
9. Khatun, A., Baruah, S. and **Chatterjee, C.** (2025) "Assessing flood susceptibility using geospatial techniques and analytical hierarchy process in an Indian catchment", EGU General Assembly 2025, Copernicus Meetings, Vienna, Austria and Online, 27 April-2 May 2025; DOI: 10.5194/egusphere-egu25-12404.
10. Swain, S.S., Mishra, A. and **Chatterjee, C.** (2025) "Concurrent hydro-climate drought extremes in eastern India under climate change scenarios", EGU General Assembly 2025, Copernicus Meetings, 27 April–2 May 2025, Vienna, Austria and Online, EGU25-760. DOI: 10.5194/egusphere-egu25-760
11. Sarkar, S., Dey, A., **Chatterjee, C.** and Mitra, P. (2025) "KAN-enhanced LSTM for accurate and scalable flood forecasting: A case study of the Mahanadi Basin", EGU General Assembly 2025, Copernicus Meetings, Vienna, Austria, 27 April–2 May 2025. DOI: 10.5194/egusphere-egu25-8031
12. Biswal, S., Mailapalli, D.R., Sridhar, V. and **Chatterjee, C.** (2025). "UAV-based multispectral sensing for disease-induced yield assessment in paddy crop: A comparative analysis of SVM and MLR machine learning approaches", in "Digital Transformation for Growth—Empowering Agro-Rural Economies Towards Sustainable Viksit Bharat @2047" Conference, Theme – 1: Digital Technologies, Indian Institute of Technology Kharagpur, Kharagpur, India, 4-5, March 2025.
13. Mondal, K., Singh, R., **Chatterjee, C.**, (2025). "Integrating Water, Energy, and Food Systems: A Web-Based Modeling Framework for Policy Analysis". International Seminar on Digital Transformation for Growth: Empowering Agro-Rural Economies Towards Sustainable Viksit Bharat @2047 Seminar, Theme – 1: Policy Framework, Indian Institute of Technology Kharagpur, Kharagpur, India, 4th-5th March 2025.

14. Khose, S.B, Vankudoth, P, Mailapalli, D.R. and **Chatterjee, C.** (2025). “Machine Learning-based crop height estimation using UAV-based multispectral image analytics”, in "Digital Transformation for Growth—Empowering Agro-Rural Economies Towards Sustainable Viksit Bharat @2047" Conference, Theme – 1: Digital Technologies, Indian Institute of Technology Kharagpur, Kharagpur, India, 4-5, March 2025.
15. Mohanty, R.S., **Chatterjee, C.** and Sahoo, B. (2025) "Enhancing accuracy of IMERG-E satellite rainfall products for Mahanadi River Basin using bias-correction methods", EGU General Assembly 2025, Copernicus Meetings, Vienna, Austria, 27 April–2 May 2025. <https://doi.org/10.5194/egusphere-egu25-15074>
16. Swain, S.S., Mishra, A. and **Chatterjee, C.** (2024) "Towards sustainable agriculture: Hydrological modelling and BMPs in freshwater ecosystems of eastern India", AGU Fall Meeting 2024, USA, 09-13 December 2024.
17. Sarkar, S., Kumar, B., Dey, A., **Chatterjee, C.** and Mitra, P. (2024) "A novel lightweight GaborNet based architecture for flood detection with limited SAR and optical imagery", AGU Fall Meet 2024, Annual Meetings, Washington DC, USA, 9-13 December 2024. DOI: 10.22541/essoar.174164234.47208182/v1
18. Dey, A., Sarkar, S., Mitra, P., Mondal, A. and **Chatterjee, C.** (2024) “Enhanced NDVI prediction for rice crops using hybrid attention-based spatio-temporal models and semi-automated datasets”, AGU Fall Meeting 2024, Annual Meetings, Washington DC, USA, 9-13 December 2024. DOI: 10.22541/au.173627451.15541741/v1
19. Mohanty, R.S., **Chatterjee, C.** and Sahoo, B. (2024). "Evaluating hydrological responses to climate change in the Mahanadi Basin", AGU Fall Meeting 2024, Washington DC, USA, 9-13 December 2024.
20. Singh, R., Mondal, K. and **Chatterjee, C.** (2024). "Assessing the impact of climate change on the water-energy-food nexus using a newly developed WEF nexus model", 75th IEC Meeting and 9th AsRC, ICID conference, WG-WFEN Workshop, 1-7 September 2024, Sydney, Australia. Paper No. 1. https://icid-ciid.org/icid_data_web/wfen_proc_sydney2024.pdf#page=10.
21. Mishra, A., Mondal, K., **Chatterjee, C.** and Singh R. (2024). "Water, Energy and Food Nexus in India – Analysing coupling and coordination degree at a spatial scale", 75th IEC Meeting and 9th AsRC, ICID conference, WG-WFEN Workshop, 1-7 September 2024, Sydney, Australia, Paper No. 3. https://icid-ciid.org/icid_data_web/wfen_proc_sydney2024.pdf#page=10.
22. Khatun, A. and **Chatterjee, C.** (2024) “Incorporating smoothing algorithms with long short-term memory networks for daily streamflow forecasting”, 4th International Conference on River Corridor Research and Management, Indian Institute of Technology Guwahati, and Online, 7-9 March 2024.

23. Khatun, A., Sahoo, B. and **Chatterjee, C.** (2023) "Development of a deep learning-based error-updating model for improved streamflow forecasting accuracy of a hydrological model", AGU Fall Meeting 2023, San Francisco, CA, and Online, 11-15 December 2023. DOI: 10.22541/essoar.170800906.63687009/v1.
24. Khatun, A., Sahoo, B. and **Chatterjee, C.** (2023) "Development of a hybrid ensemble rainfall bias-correction technique using copulas and enhanced Kohonen Self-Organizing Maps", AGU Fall Meeting 2023, San Francisco, CA, and Online, 11-15 December 2023. DOI: 10.22541/essoar.170800908.80426465/v1.
25. Mailapalli A., Khose S.B., Dubey S., Mailapalli D.R., **Chatterjee C.**, Raghuvanshi N.S. (2023) "Prediction of pest infestation in tea leaves using Machine Learning models", International Conference on Systems and Technologies for Smart Agriculture (ICSTA 2023) organized by IEEE, 19-20 December 2023, Kolkata, India
26. Mondal, K., Gupta, V., **Chatterjee, C.** and Singh, R. (2023) "Impact analysis of climate change affected crop yield on Water-Energy-Food nexus in an Indian river basin", AGU Fall Meeting 2023, San Francisco, CA, and Online, 11-15 December 2023. <https://agu.confex.com/agu/fm23/meetingapp.cgi/Paper/1332409>.
27. Saha, R., Misra, S., **Chatterjee, C.** and Biswas, A. (2023) "CNN-based rice Nitrogen status estimation using UAV integrated multispectral camera images," IEEE 3rd Applied Signal Processing Conference (ASPCON), India, 2023, pp. 77-81, DOI: 10.1109/ASPCON59071.2023.10396333.
28. Mondal, K., **Chatterjee, C.** and Singh, R. (2023) "Coupling and coordination assessment of water, energy, and food nexus in India – A spatial scale analysis", 25th ICID Congress and 74th IEC Meeting, 1–8 November 2023, Visakhapatnam (Vizag), Paper No. 09; https://icid-ciid.org/icid_data_web/25Cong Workshop-WFE-N.pdf.
29. Choubey, S., Dey, T., Akuli, A., Mailapalli, D. R., **Chatterjee, C.**, Bej, G., Pal, A. and Ghosh, A. (2023) "A comparative study of feature detection and description algorithms for computer vision applications: assessing accuracy and computational efficiency", International Conference 'Systems and Technologies for Smart Agriculture (ICSTA 2023)', Organised by Ministry of Electronics and Information Technology (MEITY), New Delhi, Biswa Bangla Convention Centre, New Town, Kolkata, 19-20 December 2023.
30. Swain, S. S., Mishra, A., and **Chatterjee, C.** (2023) "Basin-scale Trend Analysis of Hydro-climatic Variables from Historical to Projected CMIP5 Future". Asia Oceania Geosciences Society (AOGS) 2023, Singapore, 30 July-4 August 2023.
31. Khatun, A., **Chatterjee, C.** and Sahoo, B. (2023) "Daily streamflow forecasting in the Mahanadi river basin using a novel deep learning-based model", EGU General

Assembly 2023, Copernicus Meetings, 23–28 April 2023, DOI: 10.5194/egusphere-egu23-4812.

32. Mondal, K., **Chatterjee, C.** and Singh, R. (2023) "Water-Energy-Food Nexus Analysis at Basin Level to Improve the Resources Availability and Accessibility Sources", EGU General Assembly 2023, Copernicus Meetings, 23–28 April 2023, DOI: 10.5194/egusphere-egu23-4253.
33. Biswal, S., **Chatterjee, C.** and Mailapalli, D. R. (2023) "Convolution Neural Network (CNN) approach for classification of diseased and healthy paddy crop using UAV-based multispectral imageries", EGU General Assembly 2023, Vienna, Austria, 24–28 Apr 2023, egu23-2812, DOI: <https://doi.org/10.5194/egusphere-egu23-2812>.
34. Biswal, S., **Chatterjee, C.** and Mailapalli, D. R. (2022) "Yield assessment due to varied inundation in paddy crop using UAV-based remote sensing", In AGU Fall Meeting Abstracts (Vol. 2022, pp. GC45D-0997); Bidcode: 2022AGUFMGC45D0997B.
35. Khose, S. B., Mailapalli, D., **Chatterjee, C.** and Mitra, P. (2022) "Mapping of rice crop height using multispectral imagery-based digital surface model", AGU Fall Meeting 2022, 12-16 December 2022, DOI: 10.22541/essoar.168167396.65579224/v1
36. Khatun, A., **Chatterjee, C.** and Sahoo, B. (2022) "Forecasting flood inundations in the delta region of a highly flood-prone tropical river basin", AGU Fall Meeting 2022, 12-16 December 2022, DOI: 10.22541/essoar.167326700.08820804/v1
37. Khatun, A., **Chatterjee, C.** and Sahoo, B. (2022) "Short-to-medium range flood forecasting at a downstream location of a reservoir using Long-Short Term Memory Networks", International Conference on Climate and Weather-Related Extremes, IIT Roorkee, 19-20 September 2022.
38. Swain, S. S., Mishra, A., and **Chatterjee, C.** (2022) "Combined precipitation- and temperature- based dry and wet spell dynamics of the Sabarmati River, India", In AGU Fall Meeting Abstracts (Vol. 2022, pp. GC42K-0845), 12-16 December 2022.
39. Swain, S. S., Mishra, A. and **Chatterjee, C.** (2022) "A multi-scale assessment of compound drought and hot extreme events in the Baitarani river basin", International Conference on Climate and weather-related Extremes (ICCWE-2022), IIT Roorkee, 19-20 September 2022.
40. Mondal K., Tantuway R. B., **Chatterjee C.** and Singh, R. (2022) "Development of Water-Energy-Food nexus model for basin-scale studies", 24th ICID Congress & 73 IEC Meeting at Adelaide, Australia, 3-10 October 2022; WS_WEF_N Paper No. 01, https://icid-ciid.org/icid_data_web/Workshop_WFEN2022.pdf.
41. Mondal K., **Chatterjee C.**, Mishra A. and Singh R. (2022) "Quantitative and spatial-scale Water-Energy-Food nexus analysis in India – Insight from implemented

policies", 24th ICID Congress & 73 IEC Meeting at Adelaide, Australia, 3-10 October 2022; WS_WEF_N Paper No. 05, https://icid-ciid.org/icid_data_web/Workshop_WFEN2022.pdf.

42. Swain, S. S., Mishra, A. and **Chatterjee, C.** (2022) "Modelling of compound drought-temperature extreme event framework: A multi-decadal perspective", In EGU General Assembly Conference Abstracts (pp. EGU22-11369), 23-27 May 2022, DOI: 10.5194/egusphere-egu22-11369
43. Khatun, A., **Chatterjee, C.** and Sahoo, B. (2022). "Forecasting flood inundations in the delta region of a highly flood-prone tropical river basin", AGU Fall Meeting 2022, held at Chicago, IL and online everywhere, 12-16 December 2022.
44. Swain, S. S., Mishra, A. and **Chatterjee, C.** (2022) "Modelling of compound drought-temperature extreme event framework: a multi-decadal perspective", EGU General Assembly 2022, Vienna, Austria, 23-27 May 2022, EGU22-11369, DOI: 10.5194/egusphere-egu22-11369
45. Barbetta, S., Sahoo, B., Bonaccorsi, B., Moramarco, T., Nanda, T., **Chatterjee, C.** and Todini, E. (2022) "Addressing effective real-time flood forecasting for upstream artificial reservoirs through predictive uncertainty", EGU General Assembly 2022, Vienna, Austria, 23-27 May 2022, EGU22-4458, DOI: 10.5194/egusphere-egu22-4458
46. Biswal, S., Goswami, S., Choudhary, S. S., **Chatterjee, C.** and Mailapalli, D. R. (2021) "Water Deficit Index (WDI) mapping of wheat crop for water stress detection using UAV-based remote sensing", AGU Fall Meeting 2021, held at New Orleans, L.A. and online everywhere, 13-17 December 2021, DOI: 10.1002/essoar.10510759.1
47. Khose, S., Biswal, S., Mailapalli, D. and **Chatterjee, C.** (2021). "Application of UAV in estimation of crop coefficient (K_c) using field and remote sensing data", AGU Fall Meeting 2021, held at New Orleans, L.A. and online everywhere, 13-17 December 2021, DOI: 10.1002/essoar.10510761.1
48. Swain, S. S., Mishra, A. and **Chatterjee, C.** (2021). "Empirical approach-based potential impact analysis of climate change and land-use conversions on streamflow variations: A case study of the Brahmani catchment", AGU Fall Meeting 2021, held at New Orleans, L.A. and online everywhere, 13-17 December 2021, DOI: 10.1002/essoar.10509981.1
49. Khatun, A., Ganguli, P., **Chatterjee, C.** and Sahoo, B. (2021). "Assessing compound floods in a large tropical river basin under changing climate", AGU Fall Meeting 2021 held at New Orleans, L.A. and online everywhere, 13-17 December, 2021, DOI: 10.1002/essoar.10509165.1
50. Swain, S. S., Mishra, A. and **Chatterjee, C.** (2021). "Multi-scalar drought index-based decadal drought monitoring in the Brahmani and Baitarani catchment", 30th National

Web Conference on "Soil and Water Management Technologies for Climate Resilience, Agricultural and Environmental Sustainability" (NCSCSI), Soil Conservation Society of India, 14-16, December 2021.

51. Swain, S. S., Mishra, A., **Chatterjee, C.** and Sahoo, B. (2021) "Decadal-scale assessment of blue and green water resources in the Brahmani river basin, Odisha", EGU General Assembly 2021, Copernicus Meetings, 19-30 April 2021; DOI: 10.5194/egusphere-egu21-10243.
52. Khatun, A., **Chatterjee, C.** and Sahoo, B. (2021). "Investigating the role of streamflow forecasts to mitigate floods in the delta region of Mahanadi River basin", Hydro 2020 International, 25th International Conference on Hydraulics, Water Resources and Coastal Engineering, National Institute of Technology Rourkela, Odisha, India (Online), 26-28 Mar 2021.
53. Swain, S. S., Mishra, A., **Chatterjee, C.** and Sahoo, B. (2021) "Climate change or land-use dominated streamflow variations: An empirical model-based contribution analysis of the Baitarani River Basin, India", HYDRO 2020- International Conference (Hydraulics, Water Resources and Coastal Engineering), National Institute of Technology Rourkela, 26-28 March, 2021.
54. Swain, S. S., Agrawal, S. K., Mishra, A. and **Chatterjee, C.** (2021) "Isolation of climate change impact and land use alterations on streamflow variations: A multiscale assessment of the Baitarani catchment", International Conference on Emerging Trends in Sustainable Infrastructural Developments (ICETSID-2021), Sharda University, Greater Noida, Delhi NCR, 19-20 March 2021.
55. Bisht, D. S., **Chatterjee, C.**, Raghuwanshi, N. S. (2021) "River flow dynamics in changing climate scenarios – a case study of Mahanadi River basin of eastern India", 1st International Conference on River Corridor Research and Management, IIT Jammu, Jammu, India, 25-27 Feb 2021.
56. Barbetta, S., Sahoo, B., **Chatterjee, C.**, Nanda, T., Todini, E. and Moramarco, T. (2020) "Addressing real-time dam inflow forecasting through predictive uncertainty estimate", XXXVII Convegno Nazionale di Idraulica - IDRA2020, Università Mediterranea di Reggio Calabria, Reggio Calabria, Italy, 6-10 September 2020.
57. Khatun, A., Sahoo, B. and **Chatterjee, C.** (2020). "Analyzing the impact of bias correction of ensemble rainfall forecasts on streamflow prediction skill of a hydrodynamic model", American Geophysical Union (AGU) Fall Meeting, Online Everywhere, 1-17 Dec 2020.
58. Swain, S. S., Mishra, A., Sahoo, B. and **Chatterjee, C.** (2020). "Comparative impact assessment of climate change and land-use alteration on decadal water balance components: a case study on the Baitarani river basin, Odisha", AGU Fall Meeting 2020, 01-17 December 2020; DOI: 10.1002/essoar.10506153.1.

59. Bisht, D. S., **Chatterjee, C.** and Raghuwanshi, N. S. (2020) “A novel technique of rainfall bias correction using monthly hybrid approach”, Roorkee Water Conclave, An International Conference, IIT Roorkee, Roorkee, India, 26-28 February 2020.
60. Khatun, A., Ganguli, P., **Chatterjee, C.** and Sahoo, B. (2020) “Effect of catchment wetness on flood generation of a medium-sized catchment with tropical pluvial regime”, Roorkee Water Conclave, An International Conference, IIT Roorkee, Roorkee, India, 26-28 February 2020.
61. Barbetta, S., Sahoo, B., **Chatterjee, C.**, Nanda, T., Todini, E. and Moramarco, T. (2020) “Addressing effective real-time flood forecasting through predictive uncertainty estimate in Indian rivers”, Roorkee Water Conclave, An International Conference, IIT Roorkee, Roorkee, India, 26-28 February 2020.
62. Mohite, A. R., **Chatterjee, C.** and Singh, R. (2020) “Development of flood forecasting system for middle Mahanadi basin”, Roorkee Water Conclave, An International Conference, IIT Roorkee, Roorkee, India, 26-28 February 2020.
63. Bera, A., Misra, S. and **Chatterjee, C.** (2020) "Energy-Aware Multi-UAV Networks for On-Demand Task Execution", IEEE International Conference on Communications Workshops, Dublin, Ireland, 7-11 June 2020.
64. Khose, S. B., Mailapalli, D. R., **Chatterjee, C.**, Biswal, S., Mishra, A., Singh, R. and Raghuwanshi, N. S. (2020) “Development of crop coefficient maps for Paddy under alternate wetting and drying irrigation practice using Unmanned Aerial Vehicle (UAV) multispectral imagery”, 54th Annual Convention of ISAE and International Symposium on “Artificial Intelligence Based Future Technologies in Agriculture”, Pune, 7-9 January 2020.
65. Bisht, D. S., **Chatterjee, C.**, Raghuwanshi, N. S. and Mishra, A. (2019) “Exacerbating drought situation in India under changing climate”, National Water Conference on Water Resources and Environment, NIH Roorkee, Roorkee, India, 16-17 December 2019.
66. Bandi, V., Mailapalli, D. R., **Chatterjee, C.**, Mishra, A., Singh, R., Misra, S., and Raghuwanshi, N. S. (2019) “Developing crop coefficient maps for paddy using UAV multispectral imagery”, 53rd Annual Convention of ISAE and International Symposium on 'Engineering technologies for precision and climate smart agriculture', BHU, Varanasi, 28-30 January 2019. (Best Poster Award – 2nd position).
67. Khatun, A., **Chatterjee, C.**, and Sahoo, S. (2018) “Bivariate analysis of flood characteristics of upper Mahanadi basin, India”, First International Conference on Sustainable Water Management, Organized by Bhakra Beas Management Board (BBMB) under the aegis of National Hydrology Project, Chandigarh, 10-11 December 2018. (Awarded Third Prize).

68. Kumar, U., and **Chatterjee, C.** (2018) “Actual ET estimation using S-SEBI”, International Conference on The Networked Digital Earth, Organised by Northeastern University, Boston, MA, USA and IIT Kharagpur, 7-9 March 2018. (Best Poster Award).
69. Biswal, S., Choudhary, S. S., Saha, R., **Chatterjee, C.** and Mailapalli, D. R. (2018) “Crop condition monitoring of wheat using Unmanned Aerial Vehicle (UAV)”, First International Conference on Sustainable Water Management, Organized by Bhakra Beas Management Board (BBMB) under the aegis of National Hydrology Project, Chandigarh, 10-11 December 2018.
70. Patel, A., and **Chatterjee, C.** (2018) “Optimal number of GCP in Cartosat-DEM generation”, 52nd Annual Convention of ISAE, Anand Agricultural University, Gujarat, India, 8-10 January 2018.
71. Bisht, D. S., Beria, H., **Chatterjee, C.**, and Raghuwanshi, N. S. (2016) “Spatiotemporal analysis of meteorological drought characteristics at multiple scales over India during 1951-2014”, American Geophysical Union (AGU) Fall Meeting, San Francisco, United States of America, 12-16 Dec 2016.
72. Mohite, A. R., Beria, H., Behera, A. K., **Chatterjee, C.**, and Singh, R. (2016). “Statistical and hydrological evaluation of precipitation forecasts from IMD MME and ECMWF numerical weather forecasts for Indian River basins”, American Geophysical Union (AGU) Fall Meeting, San Francisco, United States of America, 12-16 Dec 2016.
73. Mohite, A. R., **Chatterjee, C.**, and Singh, R. (2016). “Coupled rainfall-runoff and hydrodynamic modeling using MIKE 11 model for satellite and observed precipitation data”, International conference on Emerging Technologies in Agricultural and Food Engineering (ETAE), IIT Kharagpur, 27-30 Dec 2016.
74. Roy, S., **Chatterjee, C.**, and Raghuwanshi, N, S. (2016). “Crop Evapotranspiration estimation from Landsat 8 data over Kangsabati river basin”, International conference on Emerging Technologies in Agricultural and Food Engineering (ETAE), IIT Kharagpur, 27-30 Dec 2016.
75. Bisht, D. S., **Chatterjee, C.**, Raghuwanshi, N. S. (2016) “Changing rainfall patterns in Godavari and Krishna river basins”, International Conference on Climate Change, Water, Agriculture and Food Security, ICRISAT Hyderabad, India, 2-3 Nov 2016.
76. Mohite, A. R., **Chatterjee, C.**, and Singh, R. (2016). “Flood forecasting using observed and forecast rainfall data from numerical weather prediction models”, International Conference on Climate Change, Water, Agriculture and Food Security, ICRISAT Hyderabad, India, 2-3 Nov 2016.

77. Kumar, A., Singh, R. and **Chatterjee, C.** (2016). “Uncertainty comparison in simulating river discharge by hydrological models and its ensemble”, International Conference on Climate Change, Water, Agriculture and Food Security, ICRISAT Hyderabad, India, 2-3 Nov 2016.
78. Nanda, T., Beria, H., Sahoo, B, and **Chatterjee, C.** (2016). “Application of satellite-based rainfall and medium range meteorological forecast in real-time flood forecasting in the Mahanadi River basin”. European Geosciences Union General Assembly, Vienna, Austria, 17-22 April, 2016.
79. Singh, R., Kumar, A., **Chatterjee, C.** and Mishra, A. (2016). “Discharge estimation in reduced uncertainty framework using ensemble modeling”, Paper presented in 8th International Perspective on Water Resources and the Environment (ASCE and EWRI), Colombo, Sri Lanka, January 4-6, 2016.
80. Nanda, T., Beria, H., Sahoo, B., and **Chatterjee, C.** (2016). “Evaluation of satellite-based rainfall estimates for flood forecasting”, Paper presented in 8th International Perspective on Water Resources and the Environment (ASCE and EWRI), Colombo, Sri Lanka, January 4-6, 2016.
81. Jena, P. P. and **Chatterjee, C.** (2016). “Application of Cartosat-1 DEM in river flow modeling in data scarce region”, 50th Annual Convention of Indian Society of Agricultural Engineers on Agricultural Engineering in Nation Building: Contributions and Challenges, OUAT, Bhubaneswar, 19-21 January, 2016, ISAE-2016/SWE/HWM-03, p. 208.
82. Mohite, A. R., **Chatterjee, C.** and Singh, R. (2016). “Rainfall-runoff modeling using MIKE NAM model”, 50th Annual Convention of Indian Society of Agricultural Engineers on Agricultural Engineering in Nation Building: Contributions and Challenges, OUAT, Bhubaneswar, 19-21 January, 2016, ISAE-2016/SWE/HWM-15, p. 213.
83. Beria, H., Nanda, T., and **Chatterjee, C.** (2015) “Bias correction of satellite precipitation products for flood forecasting application at the Upper Mahanadi River Basin in Eastern India”, Paper No. H51H-1485, American Geophysical Union (AGU) Fall Meeting, San Francisco, CA, H51H-1485, 14-18, December, 2015.
84. Kumar, A., Singh, R., Mishra, A. and **Chatterjee, C.** (2015). “Assessment of climate change impact on river discharge using reduced uncertainty ensemble modeling framework”, Paper No. GC23C-1155, American Geophysical Union (AGU) Fall Meeting, San Francisco, CA, H51H-1485, 14-18, December, 2015.
85. Jena, P. P., **Chatterjee, C.**, and Panigrahi, B. (2014). “A low cost Cartosat-Digital Elevation Model for data scarce regions”, Proc. of National Conference on Emerging Technology Trends in Agricultural Engineering, Excel India Publishers, New Delhi held at NERIST, Itanagar, 7-9 November, 2014, pp. 329-337.

86. Mohite, A. R., Mani, P., **Chatterjee, C.**, and Singh, R. (2014). "Dam break analysis of the Hirakud Dam using MIKE model", Proc. of National Conference on Emerging Technology Trends in Agricultural Engineering, Excel India Publishers, New Delhi held at NERIST, Itanagar, 7-9 November, 2014, pp. 403-410.
87. Bisht, D. S., and **Chatterjee, C.** (2014). "Design of drainage system and a multi-purpose detention pond for storm water management of IIT Kharagpur campus using SWMM", Proc. of National Conference on Emerging Technology Trends in Agricultural Engineering, Excel India Publishers, New Delhi held at NERIST, Itanagar, 7-9 November, 2014, pp. 420-427.
88. Kumar, A., Singh, R., **Chatterjee, C.**, and Mishra, A. (2014). "Improving accuracy in modeling river discharge using Ensemble", Proc. of National Conference on Emerging Technology Trends in Agricultural Engineering, Excel India Publishers, New Delhi held at NERIST, Itanagar, 7-9 November, 2014, pp. 437-445.
89. Nanda, T., Mohite, A. R., Sahoo, B., **Chatterjee, C.**, and Singh, R. (2014). "A comparative study of rainfall-runoff modeling using ANN, WANN and NAM models", Proc. of National Conference on Emerging Technology Trends in Agricultural Engineering, Excel India Publishers, New Delhi held at NERIST, Itanagar, 7-9 November, 2014, pp. 446-454.
90. Jena, P. P., **Chatterjee, C.**, and Panigrahi, B. (2013). "Comparison effect of different cross-sectional elevation from Cartosat-1 Image on one dimensional hydrodynamic modeling", Conference on Advancements in Water Modeling, DHI and IIT New Delhi, 23-24 September, 2013.
91. Bajirao, S. Y., Samantaray, D., **Chatterjee, C.**, and Singh, R. (2013). "Flood inundation modeling and hazard assessment for the delta region of Mahanadi river basin in eastern India", Asia-Pacific International Congress on Engineering & Natural Sciences (APICENS) 2013, Bangkok (Thailand), 16-18 April 2013.
92. Mishra A., Gupta P. K., Singh R., Raghuwanshi N. S., **Chatterjee C.**, Panigrahy S. (2012). "Sediment and nutrient assessment of mangrove swamps using ArcSWAT: case study for Bhitarkanika area", International SWAT Conference, New Delhi, India, 18-20 July 2012.
93. Biswas, S., and **Chatterjee, C.** (2011). "Estimation of design flood using hydrological modeling and synthetic UH based approaches in the Mahanadi river basin of eastern India", International Perspective on Water Resources and the Environment (IPWE 2011), Singapore, 4-6 January, 2011.
94. Samantaray, D., **Chatterjee, C.** and Singh, R. (2011). "Optimal crop planning based on flood risk modeling for delta region of Mahanadi river basin", International Conference on Agricultural Engineering, Pattaya, Thailand, 31 March - 1 April, 2011.

95. Tiwari, M. K. and **Chatterjee, C.** (2009). "Daily discharge forecasting using WANNs coupled with nonlinear bias correction technique", International Association of Hydrological Sciences Publication 331, 98-108.
96. Tiwari, M.K., **Chatterjee, C.** (2009). "Hourly Flood Forecasting using BANN Coupled with Nonlinear Bias Correction Technique", Paper presented in International Conference on Food Security and Environment Sustainability (FSES-2009), 17-19 December, IIT Kharagpur.
97. Pramanik, N., **Chatterjee, C.**, Singh, R., Raghuwanshi, N. S., Pradhan, A., Jacob, X. K. and Dan, B. K. (2009). "Flood inundation simulation for the Delta Region of Mahanadi River basin using MIKE FLOOD", International Conference on Water, Environment, Energy, and Society (WEES-2009), New Delhi, Allied Publishers Pvt. Ltd.
98. Tiwari, M. K, **Chatterjee, C.**, Singh, R., Raghuwanshi, N. S. (2008). "Ensemble flood forecasting using Artificial Neural Networks in Mahanadi River basin", 13th National Symposium on "Inflow Forecasting during Extremes", Organized by NIH, CWC and IIT, Delhi at New Delhi during August 28-29, 2008.
99. Shrestha, R., Patra, J. P., Raghuwanshi, N. S., Sen, D. J., Singh, R. and **Chatterjee, C.** (2008). "Comparaison of manual and HEC_GeoHMS extracted geomorphological parameters", 42nd annual Convention of ISAE, CIAE Bhopal.
100. Mukerji, A., **Chatterjee, C.** and Raghuwanshi, N. S. and Singh R. (2007). "Flood forecasting at Jamtara gauging site of Ajay River basin using Artificial Neural Networks", National Conference on Soft Computing Applications in Water Resources and Environmental Engineering, Osmania University, Hyderabad, pp. 37-45.
101. Förster, S., **Chatterjee, C.** and Bronstert, A. (2007). "Investigation on the operation of a proposed emergency flood storage area at the middle Elbe river in the context of the Integrated Project FLOODsite", ERWG Letter, Land and Water Management in Europe, 17, pp. 4-5.
102. Förster, S., **Chatterjee, C.** and Bronstert, A., (2007). "Reducing flood risk by emergency storage - a case study from the Elbe river", In: Schanze, J. (Ed.) (2007): Flood Risk Management Research - From extreme events to citizens involvement, Proceedings of the European Symposium on Flood Risk Management Research, 06-07 Feb. 2007, Dresden, Germany, pp. 217-219.
103. Förster, S., **Chatterjee, C.** and Bronstert, A., (2006). "Hochwasserüberschwehmungssimulation mittels hydrodynamischer modellierung für das management eines geplanten polderstandortes an der mittleren Elbe", In: Jüpner, R. (Ed.) (2007): Beiträge zur Konferenz "Strategien und Instrumente zur Verbesserung des vorbeugenden Hochwasserschutzes", Internationale Konferenz, 23. - 25. Nov. 2006, Tangermünde, Germany, Schriftenreihe des Instituts für Wasserwirtschaft und

Ökotechnologie der Universität Magdeburg-Stendal, Band 6. Shaker Verlag, Aachen, pp. 83-92.

104. Förster, S., **Chatterjee, C.**, De Medina, V., Bateman, A. and Bronstert, A., (2006). "Flood inundation simulation using hydrodynamic models of different complexity for the management of a potential polder at the middle Elbe river, Germany", 3rd International Symposium on Integrated Water Resources Management, 26-28 Sept. 2006, Bochum, Germany.
105. Raghuwanshi M., **Chatterjee C.**, Raghuwanshi N.S., Singh R. and Kumar R., (2005), "Flood forecasting using Artificial Neural Networks" Proc. of International Conference on "Hydrological Perspectives for Sustainable Development (HYPESD-2005)", Roorkee, February 23-25, 2005, Allied Publishers, Vol I, pp. 187-195.
106. Kumar R. and **Chatterjee C.**, (2004), "Application of L-moments in development of regional flood frequency relationships for gauged and ungauged catchments", Proc. of International Conference on "Emerging Technologies in Agricultural and Food Engineering (ETAE-2004)", Kharagpur, December 14-17, 2004, Anamaya Publishers, New Delhi, pp. 19-24.
107. Sahoo, B., **Chatterjee, C.**, Raghuwanshi, N. S., Singh, R., and Kumar, R. (2003). "Basin map scale effect on GIUH based Clark and Nash models". Proc. of International Conference on Water and Environment, Advances in Hydrology, Edited by V. P. Singh and R. N. Yadav, Allied Publishers (P) Limited, New Delhi, held at Bhopal, December 15-18, 2003, pp. 73-85.
108. **Chatterjee, C.**, Mani, P., Kumar, R., and Kumar, S. (2003). "Evaluation of shifting characteristics of river Ganga between Ara and Patna using remote sensing data". One day seminar on "Shifting Characteristics of Rivers using Remote Sensing", Organized by Centre for Flood Management Studies, National Institute of Hydrology, Patna, May 02, 2003, pp. 1-109.
109. Kumar, R., Kumar, S., Chakravorty, B., **Chatterjee, C.**, Pandey, N. G., and Mani, P. (2003). "Water availability and water balance aspects of inter-basin transfer of water". Seminar on "Water Summit – 03: Networking of Rivers in India - Vision 2020", Organized by Magadh Engineers' Club Bihar and Vishveshvarya Memorial Trust, India at Patna, September 15, 2003, pp. 33-40.
110. **Chatterjee, C.**, Kumar, R., Lohani, A. K., Chakravorty, B., and Kumar, S. (2002). "Surface waterlogged area mapping of lower reaches of Gandak-Baya-Dabra-Gandaki composite river basin using IRS-1A LISS-II data". Proc. of International Conference on "Water and Wastewater: Perspectives of Developing Countries (WAPDEC)", International Water Association (IWA) Publishing, held at New Delhi, December 11-13, 2002, pp. 189-195.

111. Kumar, R., **Chatterjee, C.**, Lohani, A. K., and Mani, P. (2002). "Application of HEC-1 package for estimation of direct surface runoff hydrographs for some catchments". Proc. of International Conference on Water Related Disasters (ICWRD-2002), Analysis and Practice in Water Resources Engineering for Disaster Mitigation, New Age International (P) Limited Publishers, held at Kolkata, December 5-6, 2002, Vol. 1, pp. 80-83.
112. Kumar, R., **Chatterjee, C.**, Kumar, S., and Mani, P. (2002). "Development of regional flood frequency relationship using L-moments for gauged catchments of Sone Subzone 1(d) of India". Proc. of International Conference on Hydrology and Watershed Management (ICHWAM-2002), BS Publications, Hyderabad, December 18-20, 2002, pp. 33.
113. Kumar, R., **Chatterjee, C.**, Kumar, S., Lohani, A. K., Singh, R. D., and Nema, R. K. (2002). "Development of GIS based GIUH model for an ungauged catchment". Proc. of International Conference on Advances in Civil Engineering (ACE), Department of Civil Engineering, IIT Kharagpur, Allied Publishers Limited, January 3-5, 2002, Vol. 1, pp. 182-189.
114. Lohani, A. K., Singh, R. D., Nema, R. K., Kumar, R., and **Chatterjee, C.** (2002). "Estimation of design flood for a hilly catchment using GIS supported GIUH approach". Proc. of International Conference on Water Related Disasters (ICWRD-2002), Analysis and Practice in Water Resources Engineering for Disaster Mitigation, New Age International (P) Limited Publishers, held at Kolkata, December 5-6, 2002, Vol. 1, pp. 16-19.
115. Kumar, R., **Chatterjee, C.**, Panigrahi, N., Patwari, B. C., and Singh, R. D. (2002). "Development of regional flood frequency relationship using L-moments for North Brahmaputra region". Seminar on "Integrated Water Resources Development and Management", Organized by the Institution of Engineers (India), Assam State Centre, Guwahati, July 12, 2002, pp. 8-18.
116. Lohani, A. K., **Chatterjee, C.**, Kumar, R., and Bhatia, K. K. S. (2002). "GIS and remote sensing approach for determination of runoff indices of a catchment". Symposium on "Flood Management", Organized by the Institution of Engineers (I), Punjab and Chandigarh, State Centre, at Chandigarh, April, 19-20, 2002, pp. 126-133.
117. **Chatterjee, C.**, Kumar, R., Lohani, A. K., Kumar, S., and Bhatia, K. K. S. (2002). "Surface waterlogged area and land use/land cover mapping using satellite remote sensing data". Symposium on "Flood Management", Organized by the Institution of Engineers (I), Punjab and Chandigarh, State Centre, at Chandigarh, April, 19-20, 2002, pp. 115-125.
118. Kumar, R., **Chatterjee, C.**, Kumar, S., and Lohani, A. K. (2002). "Use of L-moments in development of regional flood frequency relationships for gauged and ungauged catchments". Conference on "Developments in Hydrology - The Current Status"

organized by the Indian Power and River Valley Development, Kolkata, October 24-25, 2002.

119. Kumar, R., **Chatterjee, C.**, Singh, R. D. and Ramasastry, K. S. (2002). "Use of L-moments in regional flood frequency analysis for Middle Ganga Plains—regional homogeneity considerations". Symposium on "Flood Management", Organized by the Institution of Engineers (I), Punjab and Chandigarh, State Centre, at Chandigarh, April, 19-20, 2002, pp. 145-158.
120. **Chatterjee, C.**, Mani, P., Kumar, R. and Kumar, S. (2002). "Evaluation of shifting characteristics of river Ganga between Ara and Patna using IRS-1C LISS-III and PAN data". Seminar on "Technology for Humanity", Organized by Magadh Engineers' Club, Bihar and Vishveshvaraya Memorial Trust, India on 15th September, 2002.
121. Lohani, A. K., Singh, R. D., Nema, R. K., Kumar, R., and **Chatterjee, C.** (2002). "Development of GIS and GIUH based Clark Model for a Hilly Catchment". Symposium on "Flood Management", organized by the Institution of Engineers (I), Punjab and Chandigarh, State Centre, at Chandigarh, April, 19-20, 2002, pp. 134-144.
122. Kumar, R., **Chatterjee, C.**, and Kumar, S. (2002). "Some of the recent approaches for flood estimation, forecasting and management—Case studies", Workshop on, "Living with Floods—Degree of Tolerance". Organized by Centre for Water Resources Studies, Bihar College of Engineering, Patna, March, 02, 2002.
123. **Chatterjee, C.**, Kumar, R., Lohani, A. K., and Singh, R. (2002). "Surface waterlogged area mapping using satellite remote sensing data". 36th Annual Convention and Symposium on, "Information Technology for Sustainable Agriculture", Organized by Indian Society of Agricultural Engineers, at Department of Agril. & Food Engg., IIT, Kharagpur, January 28-30, 2002.
124. **Chatterjee, C.**, Kumar, R., Lohani, A. K., and Nema, R. K. (2001). "GIS application in morphometric analysis of drainage basins". 16th National Convention of Computer Engineers, on, "Impact of Information Technology on Quality of Life-Future Strategy". Organized by the Institution of Engineers (India), Bihar State Centre, Patna, November 24-25, 2001, pp. 87-96.
125. Kumar, R., **Chatterjee, C.**, and Lohani, A. K. (2001). "Application of remote sensing technique in surface waterlogged area mapping". 16th National Convention of Computer Engineers, on, "Impact of Information Technology on Quality of Life-Future Strategy". Organized by the Institution of Engineers (India), Bihar State Centre, Patna, November 24-25, 2001, pp. 103-112.
126. Lohani, A. K., Kumar, R., and **Chatterjee, C.** (2001). "Computer based surface water data processing: techniques and tools". 16th National Convention of Computer Engineers, on, "Impact of Information Technology on Quality of Life-Future Strategy".

Organized by the Institution of Engineers (India), Bihar State Centre, Patna, November 24-25, 2001, pp. 137-144.

127. Kumar, S., Kumar, R., Chakravorty, B., **Chatterjee, C.**, and Pandey, N. G. (2001). "An artificial neural network approach for flood forecasting". 16th National Convention of Computer Engineers, on, "Impact of Information Technology on Quality of Life-Future Strategy". Organized by the Institution of Engineers (I), Bihar State Centre, Patna, November 24-25, 2001, pp. 77-86.
128. **Chatterjee, C.**, Kumar, R., Lohani, A. K., Chakravorty, B., and Kumar, S. (2001). "Waterlogged area mapping of lower reaches of Gandak-Baya-Dabra-Gandaki composite river basin using IRS-1C LISS-III data". National Seminar on Water and Land Management including CAD for Socio-Economic Upliftment of N. E. Region, Organized by NERI-WALMI, Guwahati, November 22-23, 2001.
129. **Chatterjee, C.**, Kumar, R., Lohani, A. K., Jha R., and Jaiswal, R. K. (2001). "Runoff estimation using remote sensing and GIS based SCS method", Workshop on Remote Sensing and GIS Application in Water Resources Engineering, Organized by CBIP, in Lucknow, August 29-31, 2001, pp. 1-7.
130. **Chatterjee, C.**, and Kumar, R. (2001). "Application of remote sensing and GIS in Flood management". Seminar on "Natural Disaster Management", Organized by Magadh Engineers' Club Bihar and Vishveshvarya Memorial Trust, India at Centre for Water Resources Studies, Patna, April 14, 2001, pp. 26-27.
131. **Chatterjee, C.**, Kumar, R., Lohani, A. K., and Kumar, S. (2001). "Application of remote sensing and GIS in water and land resources planning and management". National Seminar on "Land and Water Management Issues of 21st Century". WALMI, Lucknow, March 1-2, 2001, pp. 265-278.
132. Kumar, R., **Chatterjee, C.**, Kumar, S., Lohani, A. K. and Singh, R. D. (2000). "Development of regional flood frequency relationships using L-moments for South Bihar". Proc. of International Conference on Integrated Water Resources Management (ICIWRM), NIH, Roorkee, Ajay Printers and Publishers, December 19-21, 2000, Vol. 1, pp. 805-812.
133. Lohani, A. K., **Chatterjee, C.**, Ghosh, N. C., and Kumar, R. (2000). "Optimal estimation of storage release alternatives for management of a surface waterlogged area". Proc. of International Conference on Integrated Water Resources Management (ICIWRM), NIH, Roorkee, Ajay Printers and Publishers, December 19-21, 2000, Vol. 1, pp. 711-724.
134. **Chatterjee, C.**, Lohani, A. K., Jha, R. and Jaiswal, R. K. (2000). "Determination of runoff indices using remote sensing and GIS.", National Symposium on "Remote Sensing Applications for Natural Resources with Special Emphasis on Watershed

Management”, Organized by Indian Society of Remote Sensing, Bhubaneswar, March 22-24, 2000.

135. **Chatterjee, C.**, Lohani, A. K., Jha, R. and Jaiswal, R. K., (2000). “Hydrological land use study using remote sensing and GIS.”, National Symposium on “Remote Sensing Applications for Natural Resources: Retrospective and Perspective”, Organized by Indian Society of Remote Sensing, Bangalore, pp. 119.
136. Singh, R. D., Kumar, R., Kumar, S., **Chatterjee, C.**, and Lohani, A. K. (2000). “Design flood estimation for a sub-basin of river Tons”, Workshop on ‘Flood Management in Uttar Pradesh’, Organized by Institution of Engineers (I), U.P. State Centre, Lucknow. February 2000.
137. Kumar, R., Kumar, S., **Chatterjee, C.**, Pandey, N. G., and Chakravorty, B. (2000). “Regional flood frequency analysis for South Bihar”. Workshop on ‘Flood Management in Uttar Pradesh’, organized by Institution of Engineers of India, U.P. State Centre, Lucknow. February 2000.
138. **Chatterjee, C.**, Singh, R., and Kar, S. K. (1997). “Discharge measurement with chimney weir under submergence”. Proc. of 2nd International Conference on Water and Energy, CBIP, Vol. 1, pp. 411-416.
139. **Chatterjee, C.**, and Tiwari, K. N. (1995). “Finite element analysis of drip irrigation system”. American Society of Agricultural Engineers, Proc. of the 5th International Microirrigation Congress held in Orlando, Florida, pp. 91-96.
140. **Chatterjee, C.**, and Tiwari, K. N. (1995). “Finite element design of drip irrigation system.” XXXI Annual Convention of ISAE held at Trichur, Kerela, pp. 14.

(C) E-Textbooks and Edited Volume: 3

1. **Chatterjee, C.** and Singh, R. (2016) “Watershed Hydrology”, Publisher: E-Book of Indian Council of Agricultural Research (ICAR), Agrimoon.com. No. of Pages – 223.
2. Tiwari, K. N., **Chatterjee, C.**, Gontia, N. K., Jena, S. K. (2016) “Remote Sensing and GIS Applications”, Publisher: E-Book of Indian Council of Agricultural Research (ICAR), Agrimoon.com. No. of Pages – 323.
3. Tiwari, K. N., Jha, M. K., **Chatterjee, C.**, and Mishra, A. (2016) “Precision Farming and Resource Management: Natural Resources Engineering and Management”. Publisher: Excel India Publishers; ISBN: 978-93-86256-29-4; No. of Pages – 446

(D) Copyrights: 1 (Granted); 3 (Under Review)

1. Piyush Kumar Singh, Damodhara Rao Mailapalli, **Chandranath Chatterjee**, and Ronith Patnaik Vasantarao (2025). E-FPO - multiplatform application for farmer producer

organizations. Dairy no: SW-27991/2025-CO dated 14/07/2025. (Reg. No. SW-27991/2025-CO).

2. Amratansu Mishra, Avinash Mailapalli, Ronith Patnaik Vasantarao, Rahul Rathaur, Damodhara Rao Mailapalli, **Chandranath Chatterjee**, and Narendra Singh Raghuwannshi (2025). IITea: infestation information in tea. Dairy no: SW-17814/2025-CO dated 29/04/2025. (Under review).
3. Krishna Mondal, **Chandranath Chatterjee**, and Rajendra Singh (2025). Web-based water-energy-food nexus model (WbWEFNM) for multi-scale studies. Dairy no: SW-44677/2025-CO dated 03/11/2025. (Under review)
4. Saidutta Mohanty, Bhabagrahi Sahoo, **Chandranath Chatterjee**, Susanta Kumar Jena, and Arjamadutta Sarangi (2026). Geo-WatMap: a geospatial tool for automated mapping of small water bodies. Dairy no: SW-46508/2025-CO dated 14/01/2026 (Under review)

(E) Book Chapters: 9

1. Khatun, A., Kumar, A., **Chatterjee, C.** (2026). “Exploring the efficacy of different variants of long short-term memory networks in daily streamflow forecasting” In: *Advances in Chemical Pollution, Environmental Management and Protection, Elsevier*, <https://doi.org/10.1016/bs.apmp.2025.11.005>
2. Swain, S.S., Mishra, A., **Chatterjee, C.**, and Levy, M.C. (2025). “A hydrologic modeling assessment of future water scarcity in the Baitarani river basin”. In: Nanda, A., Gupta, P.K., Gupta, V., Jha, P.K., Dubey, S.K. (eds) *Navigating the Nexus: Hydrology, Agriculture, Pollution and Climate Change*, Water Science and Technology Library, vol 102, pp. 499-526, Springer, Cham. https://doi.org/10.1007/978-3-031-76532-2_20
3. Mondal, K., Gupta, V., **Chatterjee, C.**, Singh, R. (2025). “Analysing the impact of climate change on crop yield and its consequences for the Water-Energy-Food nexus in an Indian river basin”. In: Nanda, A., Gupta, P.K., Gupta, V., Jha, P.K., Dubey, S.K. (eds) *Navigating the Nexus: Hydrology, Agriculture, Pollution and Climate Change*, Water Science and Technology Library, vol 102. Springer, Cham. https://doi.org/10.1007/978-3-031-76532-2_8
4. Mailapalli, A., Khose, S.B., Dubey, S., Mailapalli, D.R., **Chatterjee, C.**, and Raghuwannshi, N.S. (2024). “Prediction of Pest Infestation in Tea Leaves Using Machine Learning Models”. In: Saha, H.N., Ray, H., Bradford, P.G. (eds.), *International Conference on Systems and Technologies for Smart Agriculture*, Springer Proceedings in Information and Communication Technologies, pp. 275-287, https://doi.org/10.1007/978-981-97-5157-0_23
5. Choubey, S., Dey, T., Akuli, A., Mailapalli, D. R., **Chatterjee, C.**, Bej, G., Pal, A., and Ghosh, A. (2024). “A comparative study of feature detection and description algorithms for computer vision applications: assessing accuracy and computational efficiency”. In

Saha, H.N., Ray, H., Bradford, P.G. (eds.), International Conference on Systems and Technologies for Smart Agriculture, Springer Proceedings in Information and Communication Technologies, pp. 51-62, https://doi.org/10.1007/978-981-97-5157-0_5.

6. Sahoo B., Nanda T., and **Chatterjee C.** (2022). “Flood forecasting using simple and ensemble Artificial Neural Networks”. In: Pandey A., Chowdary V.M., Behera M.D., Singh V.P. (eds) *Geospatial Technologies for Land and Water Resources Management*. Water Science and Technology Library, vol 103. Springer, Cham. https://doi.org/10.1007/978-3-030-90479-1_24.
7. Tiwari, M. K., and **Chatterjee, C.** (2018). “Flood forecasting and uncertainty assessment using wavelet- and bootstrap-based neural networks”, Chapter 4 in *Handbook of Research on Predictive Modeling and Optimization Methods in Science and Engineering*, IGI Global, 74-93.
8. Das, D.M., Singh, R., Kumar, A., Mailapalli, D.R., Mishra, A., and **Chatterjee, C.** (2016). “A multi-model ensemble approach for stream flow simulation”, Chapter 4 in *Modeling Methods and Practices in Soil and Water Engineering*, edited by Panigrahi, B and Goyal, CRC Press, 72-100.
9. Kumar, R., and **Chatterjee, C.** (2011). “Development of regional flood frequency relationships for gauged and ungauged catchments using L-moments”, in *IN EXTREMIS: Disruptive Events and Trends in Climate and Hydrology*, edited by J. P. Kropp and H. J. Schellnhuber, Springer, 105-127.

(F) Technical Reports: 15

1. **Chatterjee, C.**, Jha, R., Lohani, A. K., and Jaiswal, R. K. (1997). “Determination of SCS runoff curve number and land use changes for Hamidnagar sub-basin of Punpun basin.” Report No. CS(AR) 14/96-97, National Institute of Hydrology, Roorkee.
2. **Chatterjee, C.**, Mani, P., Kumar, R., and Kumar, S. (2002). “Evaluation of shifting characteristics of river Ganga between Ara and Patna using IRS-1C LISS-III and PAN data.” National Institute of Hydrology, Roorkee.
3. **Chatterjee, C.**, Kumar, R., Chakravorty, B., Lohani, A. K., and Kumar, S. (2002). “Waterlogged area mapping of the lower reaches of Gandak basin using remote sensing technique.” National Institute of Hydrology, Roorkee.
4. Lohani, A. K., **Chatterjee, C.**, and Ghosh, N. C. (2000). Report on “A management model for the waterlogging and drainage congestion problem of Mokama group of Tals in Central Bihar.” National Institute of Hydrology, Roorkee, R. K. Printers & Publishers, Roorkee.
5. Kumar, R., **Chatterjee, C.**, Panigrahy, N., Patwari, B. C, and Singh, R. D. (2000). “Development of regional flood formula using L-moments for North Brahmaputra river system.” Report No. TR/BR-4/1999-2000, National Institute of Hydrology, Roorkee.

6. Kumar, R., **Chatterjee, C.**, Kumar, S., Lohani, A. K., and Singh, R. D. (2000). "Flood estimation by GIS based GIUH approach for Ajay basin upto Sarath gauging site of South Bihar." Report No. TR/BR-17/1999-2000, National Institute of Hydrology, Roorkee.
7. Kumar, R., **Chatterjee, C.**, Kumar, S., Lohani, A. K., and Singh, R. D. (2000). "Development of regional flood frequency relationship using L-Moments for South Bihar/Jharkhand." Report No. TR/BR-19/1999-2000, National Institute of Hydrology, Roorkee.
8. **Chatterjee, C.**, Kumar, R., Kumar, S., Lohani, A. K., and Singh, R. D. (2003). "Inter comparison of GIUH based Nash and Clark models." National Institute of Hydrology, Roorkee.
9. Kumar, R., **Chatterjee, C.**, and Kumar, S. (2003). "Uncertainty analysis of GIUH based Clark model using first order analysis for Ajay basin upto Sarath gauging site of South Bihar." National Institute of Hydrology, Roorkee.
10. Kumar, R., **Chatterjee, C.**, and Kumar, S. (2001). "Development of regional flood formulae using L-moments for Middle Ganga Plains (Subzone 1-f)." Report No. CS/AR-16/2000-2001, National Institute of Hydrology, Roorkee.
11. Kumar, R., **Chatterjee, C.**, Kumar, S., and Mani, P. (2004). "Flood hazard mapping and flood risk zoning." National Institute of Hydrology, Roorkee.
12. Kumar, R., **Chatterjee, C.**, and Kumar, S. (2004). "Development of regional flood formulae using L-moments for Sone Basin (Subzone 1-d)." National Institute of Hydrology, Roorkee.
13. Kumar, R., Singh, R. D., **Chatterjee, C.**, Lohani, A. K., Kumar, S., and Nema, R. K. (2000). "Uncertainty analysis of GIUH based Clark Model using first order analysis for a catchment of lower Godavari subzone 3(f)." Report No. TR/BR-18/1999-2000, National Institute of Hydrology, Roorkee.
14. Kumar, S., Kumar, R., and **Chatterjee, C.** (2000). "Application of artificial neural network (ANN) in flood studies of Ajay river basin." Report No. TR/BR-5/1999-2000, National Institute of Hydrology, Roorkee.
15. Kumar, S., Kumar, R., Chakravorty, B., and **Chatterjee, C.** (2003). "Development of stage-discharge relationship using artificial neural network (ANN) technique." National Institute of Hydrology, Roorkee.

Annexure-IV

Sponsored Research and Consultancy Projects

(A) Sponsored Research Projects:

No.	PI/ Co-PI	Project Name	Sponsored by	Date & Period	Funds (Rs. Lakh)
On-going: 7 Nos.					
1	PI	Development and management of surface water resources and soil moisture in different agro-ecological regions of India using Geo-informatics and Nano Technology	ICAR-IIWM, ICAR, Bhubaneswar	09-11-2021 to 08-11-2026	52.50
2	Co-PI	Climate resilience assessment of surface and groundwater sources for long term sustainability of water supply schemes in the Subarnarekha River basin	Min. of Housing and Urban Affairs, New Delhi	26-03-2026 to 25-09-2028	49.91
3	Co-PI	AI-based local weather forecasting and urban flood simulation	IIT Kharagpur, MoE	01-03-2026 to 31-03-2027	10.00
4	Co-PI	Development and field implementation of a conceptual hydrological model for efficient river basin planning and management	SERB, Department of Science and Technology, New Delhi	15-03-2023 to 14-03-2026	20.02
5	Co-PI	AI based imaging solution for detection of pest attack in tea leaves using aerial imaging	National Tea Research Foundation, Kolkata	03-04-2023 to 02-04-2026	34.58
6	Co-PI	Establishing an FPO based digital supply system for smallholders welfare in eastern India	ICSSR, JNU, New Delhi	10-09-2024 to 09-09-2025	24.00
7	Co-PI	Climate Change and water resources perspective analysis of Ken-Betwa River Basins of Bundelkhand region	DoWR, RDGR, Min of Jal Shakti, New Delhi	06-01-2025 to 05-01-2028	79.52
Completed: 21 Nos.					

8	Co-PI	AI for agriculture and food sustainability	Ministry of Electronics and Information Technology, New Delhi	01-07-2020 to 30-06-2023	131.2
9	PI	An integrated autonomous UAV and WSN - based system for crop management and crop condition monitoring	MHRD and MoA&FW, New Delhi	08-02-2017 to 31-03-2022	195
10	PI	Impact of climate change on flood risk (Vulnerability and risk assessment due to various environmental drivers in a climate change scenario over eastern India)	DST, Min of Science and Tech., New Delhi	30-03-2017 to 30-04-2022	58.51 (690.36)
11	Co-PI	Development and testing of a large scale conceptual hydrological model	NIH, Min. of Water Res., Roorkee	29-03-2018 to 31-03-2022	55.548
12	Co-PI	Climate change impact and adaptation options for sustaining rice-wheat crop production in India	DST, Min of Science and Tech., New Delhi	30-03-2017 to 29-03-2022	37.248
13	PI	Development of optimal crop planning model based on flood risk	ICAR, Min of Agril., New Delhi	13-01-2016 to 31-03-2017 (1 year)	34.925
14	PI	Flood inundation zoning for different return periods in Mahanadi river basin	INCSW, Min. of Water Res., New Delhi	01-04-2011 to 31-03-2017 (6 years)	36
15	PI	Estimation of crop coefficients from remotely sensed data to improve irrigation scheduling in India	MHRD, New Delhi	01-04-2014 to 01-04-2017 (3 years)	43.22
16	PI	Design of drainage system and multi-purpose detention pond for storm water management of IIT Kharagpur campus	IIT Kharagpur	24-12-2013 to 23-12-2016 (3 years)	45
17	Co-PI	Effect of climate change & land use/land cover changes on spatial and temporal water availability in Subarnarekha basin	Min. of Water Res., New Delhi	23-03-2018 to 22-03-2021	25.256
18	Co-PI	Ensemble modeling of rainfall-runoff transformation process	INCSW, Min. of Water Res., New Delhi	01-04-2012 to 31-12-2016 (4 years)	26

19	Co-PI	Development of a conceptual water balance model for various ecosystems of India	SAC, Ahmedabad	01-01-2014 to 31-12-2016 (2 years)	20.3
20	Co-PI	Measurement to management (M2M): improved water use efficiency and agricultural productivity through experimental sensor network	ITRA, Mumbai	21-10-2013 to 20-10-2016 (3 years)	156
21	Co-PI	Development of a GIS based decision support system for irrigation system management	INCSW, Min. of Water Res., New Delhi	2012-2016 (4 years)	42
22	Co-PI	Adaptation to changing water resources availability in northern India with Himalayan glacier retreat and changing monsoon pattern.	European Commission	2009-2012 (3 years)	155
23	Co-PI	Distributed hydrological modeling to analyse sediment and nutrient status of Brahmani-Baitrani delta	SAC, Ahmedabad	2008-2011 (3 years)	20.83
24	Co-PI	Hydrological modeling of a watershed to evaluate impacts of watershed structures on surface flow & groundwater recharge	DST, New Delhi	2007-2010 (3 years)	19.33
25	PI	Flood risk modelling using satellite remote sensing data for optimal crop planning	ISRO, Bangalore	2008-2011 (3 years)	10.78
26	Co-PI	Geo-spatial resources management with computer simulation of flood inundation for Mayurakshi and Ajoy river basins Jharkhand and West Bengal using RS & GIS	DST, New Delhi	2006-2009 (3 years)	13.77
27	PI	Flood hazard mapping & flood risk zoning for a river reach	SRIC, IIT Kharagpur	2004-2009 (5 years)	3
28	PI	Remote Sensing and GIS based management model for waterlogging and drainage congestion problem of Mokama group of Tals in Central Bihar	DST, New Delhi	2002-2004 (3 years)	7.72

(B) Consultancy Projects:

No.	PI/ Co-PI	Project Name	Sponsored by	Date & Period	Funds (Rs. Lakh)
On-going: 1 No.					
1	Co-PI	Flood management in the Campus of Texmaco Rail and Engineering Ltd., Agarpara, Kolkata	TEXMACO Rail and Engg. Ltd., Belgharia, West Bengal	04-02-2026 to 03-08-2026	19.942
Completed: 11 Nos.					
2	PI	Probable maximum flood estimation for Nagarjunasagar Dam	Govt. of Andhra Pradesh	2009-2011 (2 years)	29.10
3	PI	Review of drainage design (surface and subsurface drainage) of 4-lane highway project in the state of Karnataka	Ashoka Buildcon Limited, Karnataka	19-06-2025 to 31-10-2025	5.90
4	PI	Validation of remote sensing technology based crop yield estimation	Greenthink Ventures Pvt. Ltd., Kolkata	15-02-2021 to 02-08-2021	1.534
5	Co-PI	Procurement and implementation of hydrological model for Tungabhadra basin	Water Res. Dept., Govt. of Karnataka	01-02-2024 to 30-09-2024	65.9
6	Co-PI	Testing of Nano liquid complex fertilizers (N-K and P-K) for cereals	Aarshanano Composite Technologies Pvt. Ltd., AP	21-02-2022 to 01-05-2024	3.605
7	Co-PI	Setting-up RiverWare model for operational management and climate change impact assessment of Damodar river basin reservoirs	The World Bank, New Delhi	16-02-2018 to 31-07-2018 (1.5 years)	5.46
8	Co-PI	Testing and evaluation of the Internet of Things (IOT) based prototype designed for water management in Alternate Wetting and Drying (AWD) rice	The World Bank, New Delhi	14-02-2018 to 31-07-2018 (1.5 years)	9.13
9	Co-PI	Intervention analysis of the IGB basin focal project	IWMI, Sri Lanka	2008-2009 (1.5 years)	6

10	Co-PI	Evaluation study on the activities of Soil Conservation Department of DVC	DVC, SCD, Hazaribagh	2007-2009 (2 years)	31.5
11	Co-PI	Preparation of Perspective Plan under NFFWP	DRDA, Mayurbhanj, Orissa	2005-2005 (6 months)	7
12	Co-PI	Hydrological study of NTPC Kahalgaon power station area	NTPC	2000-2000 (4 months)	10

Annexure-V

Details of Research Guidance

(a) Guidance at Doctoral Level:

Number Completed: 15 (Single: 2 and Joint: 13)

Sl. No.	Title of Project	Name of Student & Roll. No.	Name of Co-Supervisor	Year
1	Flood inundation modeling and hazard assessment for lower Bharathapuzha basin	Xavier K Jacob 05AG9502	Prof. N. S. Raghuwanshi	July, 2009
2	River flow forecasting using wavelet transformation and bootstrap based neural networks	Mukesh Kumar Tiwari 07AG9402		Aug, 2011
3	Flood risk modeling using MIKE FLOOD and remote sensing data for optimal rice planning	Dibyendu Samantaray 08AG9708	Prof. R. Singh	Dec, 2014
4	Ensemble modeling of rainfall-runoff transformation process	Arun Kumar 12AG91P03	Prof. R. Singh	Dec, 2017
5	Flood risk management of nuclear power plant site using coupled 1D-2D hydrodynamic model	Pankaj Mani 10AG9501	Dr. Rakesh Kumar, NIH	Dec, 2018
6	Real-time flood forecasting using variable infiltration capacity model and neural networks	Trushnamayee Nanda 13AG90J01	Prof. B. Sahoo	Dec, 2018
7	Assessing the impacts of conservation measures on watershed hydrology using MIKE SHE	Gajanan K. Ramteke 08AG9701	Prof. R. Singh	July, 2019
8	Development of flood forecasting system for Mahanadi river basin using a coupled rainfall-runoff hydrodynamic model	Mohite Archana Ramchandra 11AG91R06	Prof. R. Singh	Nov, 2019
9	Multi-UAV Communication Networks: Quality-of-Experience, Quality-of-Service, and Coverage	Abhishek Bera 16AT91R01	Prof. S. Misra	Mar, 2021
10	Flood hazard assessment under changing flood regime in Mahanadi river basin	Prachi Pratyasha Jena 11AG92P01		June, 2021
11	Impact of climate change on droughts and river flow regime	Deepak Singh Bisht 14AG91P02	Prof. N. S. Raghuwanshi	September 2021
12	Impact of climate change and human activities on catchment response in Brahmani and Baitarani River basins of Eastern India	Sushree Swagatika Swain 17WM91R03	Prof. A. Mishra	June, 2023
13	Flood forecasting and risk assessment in Mahanadi Basin considering climate change	Amina Khatun 17AG92P02	Prof. B. Sahoo	June, 2023

14	Distributed learning over edge networks and its applications in agriculture	Rituparna Saha 17AT92P07	Prof. S. Misra	August, 2023
15	Unmanned aerial vehicle-based image analytics for crop condition monitoring and yield prediction of selected cereal crops	Sudarsan Biswal 18AG91R08	Prof. D. R. Mailapalli	September 2025

Number in Progress: 6 (Single: 1 and Joint: 5)

Sl. No.	Title of Project	Name of Student & Roll. No.	Name of Co-Supervisor	Year
1	Sustainable assessment of water-energy-food nexus in Kangsabati catchment	Krishna Mondal 20AG91R05	Prof. R. Singh	Ongoing
2	Machine learning for agriculture and water resources	Somrita Sarkar 21CD91P03	Prof. P. Mitra	Ongoing
3	AI/ML based flood forecasting in Mahanadi river basin	Roshan Suryakant Mohanty 22WM91R01	Prof. B. Sahoo	Ongoing
4	Development and management of surface water resources and soil moisture in different agro-ecological regions of India	Saidutta Mohanty 22AG92P01	Prof. B. Sahoo	Ongoing
5	Broad area: Flood Modeling	Saikat Karmakar 24AG91R16		Ongoing
6	Broad area: Crop Modeling	Shivangi Singh 24AG91R18	Prof. A. Mishra	Ongoing

(b) Guidance at Masters Level:

Number Completed: 73 (Single: 43 and Joint: 30)

Sl. No.	Title of Project	Name of Student, Specialization & Roll. No.	Name of Co-Supervisor	Year
1	Assessment of rainwater harvesting potential using Multi Criteria Decision Making for upper Bhima basin	Pavan G (LWRE) 23AG62R16		2025
2	Development of a GIS based flood susceptibility map using the Analytical Hierarchy Process (AHP) in the Mahanadi delta region of Odisha	Kaveti Balakrishna (LWRE) 23AG62R17	Dr. Amina Khatun, Asst. Prof., AAU	2025
3	Flood forecasting in the upper Mahanadi river basin using deep learning and hydrological models	Ashish Kumar (LWRE) 22AG62R13	Dr. Amina Khatun, Asst. Prof., AAU	2024

4	Detection of small water bodies using Machine Learning models in Google Earth Engine and delineation of potential rainwater harvesting sites in the upper Bhima river basin	Shobhit Choubey (LWRE) 22AG62R17		2024
5	Investigating the effect of anthropogenic climate changes on land surface temperature over different agro-climatic zones in India	Telu Giri Vardhini (LWRE) 22AG62R15	Dr. Mahesh Pathakoti, Scientist-SF, NRSC	2024
6	Impact of climate change on peak floods in Kantamal catchment using HEC-HMS model and CMIP6 climate change scenarios	Lakavath Aravind Kumar (19AG36019)		2024
7	Flood forecasting in upper Mahanadi River basin using deep learning models	M N Nisha (LWRE) 21AG62R07		2023
8	Estimation of yield and nitrogen status in wheat crop using UAV-based multi-spectral imageries	Arukonda Laxmi Priyanka (LWRE) 21AG62R16		2023
9	Assessment of rainwater harvesting potential in upper Bhima basin	Gourav Kumar (WEM, SoWR) 21WM60R07		2023
10	Small water body detection using remotely sensed images and machine learning approaches	Yash Vardhan Agarwal (ASM-Dual Degree) 18AG36013		2023
11	Flood forecasting in Basantpur River basin using deep learning models	Rajan Prasad (ASM-Dual Degree) 18AG36010		2023
12	Development of a flood forecasting model for the Mahanadi river basin using Long Short-Term Memory (LSTM) networks	Gaurav Sahu (LWRE) 20AG62R20		2022
13	Assessment of rainwater harvesting potential using high-resolution Sentinel data and SCS-CN in Google Earth Engine	Tarun Agarwal (LWRE) 20AG62R15	Dr. Deepak Singh Bisht, Scientist (NIH, Roorkee)	2022
14	Estimation of above ground biomass of paddy crop by integrating spectral and textural information of UAV based multispectral imagery	Navneet Pathak (LWRE) 20AG62R13		2022
15	Disease detection in paddy using deep learning on images acquired by Unmanned Aerial Vehicle (UAV)	Srushti Suresh Thorat (ASM-Dual Degree) 17AG36015		2022
16	Multi-model ensembling of Cordex future climate data for extreme event analysis: A machine learning approach	Narpat Ram Kalwaniya (ASM-Dual Degree) 17AG36012		2022
17	Detection of crop water stress using UAV based multispectral and thermal imageries	Korat Ankitkumar Ratilal (LWRE) 19AG62R16		2021

18	Flood forecasting using MIKE model and wavelet based neural networks	Manbhalang Dakermi Shylla (LWRE) 19AG62R02		2021
19	Assessment of crop nitrogen using UAV with multispectral camera	Pralipta Pani (LWRE) 18AG62R03		2020
20	Development of flood forecasting model in upper Mahanadi, Jaldhaka and Torsa basins using MIKE 11 model	Bajitborlang L Chyne (LWRE) 18AG62R01	Mr. A. K. Kharya, CE, CWC (NWA, Pune)	2020
21	Development of crop coefficient (Kc) maps for paddy using UAV based multispectral imagery	Khose Suyog Balasaheb (LWRE) 18AG62R16	Prof. D. R. Mailapalli	2020
22	Crop Condition Monitoring using Unmanned Aerial Vehicle (UAV)	Suraj Goswami (LWRE) 17AG62R08		2019
23	Crop damage assessment using Unmanned Aerial Vehicle (UAV)	Peeta Govinda Lakshmi Priya (WM) 17WM60R04		2019
24	Trends and shifts in the timing of flood peaks across Mahanadi river basin, India	Nandamuri Yamini Rama (LWRE) 17AG62R07	Prof. P. Ganguly	2019
25	Impact of climate change on streamflow in Mahanadi basin using HEC-HMS model	Sushant Kumar (LWRE) 17AG62R10	Prof. A. Pathak	2019
26	Impact of climate change on streamflow in upper Mahanadi river basin	Gavit Purnima Vithoba (16AG62R04)	Prof. Renji Ramessan	2018
27	Development of cartosat-1 DEM for flood inundation modeling & optimal rice planning in Mahanadi delta	Abhishek Patel (16AG62R09)		2018
28	Crop condition monitoring using unmanned aerial vehicle (UAV)	Sudesh Singh Choudhary (16AG62R11)		2018
29	Statistical downscaling of Global Circulation Model generated precipitation data using machine learning algorithms	Hitesh Prasad Thakur (13AG38004)	Prof. Bhabagrahi Sahoo	2018
30	Flood inundation modelling using MIKE FLOOD and CARTOSAT-1 derived DEM	Jyoti Ranjan Swain (LWRE) (15AG62R14)		2017
31	Estimation of actual evapotranspiration using satellite remote sensing data	Utkarsh Kumar (LWRE) (15AG62R11)		2017
32	Flood forecasting in the upper reaches of Mahanadi river basin using MIKE 11 models	Amit Kumar Behera (LWRE) (14AG62R17)		2016
33	Statistical and hydrologic evaluation of satellite precipitation estimates and numerical weather forecasts at a pan-India scale	Harsh Beria (LWRE) (11AG38001)		2016

34	Hydrological modeling of IIT Kharagpur campus using MIKE URBAN model	Shivani Kalakoti (LWRE) (Roll No. 13AG62R18)		2015
35	Hydrological modeling of IIT Kharagpur campus using SWMM model	Ambarnil Panda (LWRE) (Roll No. 13AG62R14)		2015
36	Design of surface drainage system and retention cum detention pond for southern region of IIT Kharagpur campus using SWMM	Deepak Singh Bisht (LWRE), 12AG62R07		2014
37	Flood inundation modelling and design of surface drainage system of a part of IIT Kharagpur campus using MIKE FLOOD and SWMM	Pawan Upadhyay (LWRE), 12AG62R12		2014
38	Flood inundation modeling of the watershed of IIT Kharagpur using Mike 21	Manaswinee Sahoo (LWRE), 12AG62R13	Prof. R. Singh	2014
39	Evaluation of shifting characteristics of river Brahmaputra between Guwahati to Goalpara using LandSat and IRS-P6 LISS-III data	Sanjay Kumar (WM), 12WM60R04	Dr. Ranjit Galappatti, DHI	2014
40	Determination of appropriate irrigation schedule to maximize the yield and water use efficiency of Maize using CERES-Maize model	Swayam Prava Singh (LWRE), 12AG62R11	Prof. R. K. Panda	2014
41	Flood forecasting in the Mahanadi river basin using artificial neural networks	Trushnamayee Nanda (LWRE), 11AG62R13	Prof. B. Sahoo	2013
42	Effect of DEMs generated from different sources on flood inundation modelling	Banamali Panigrahi (LWRE), 11AG62R16		2013
43	PMF estimation of Nagarjunasagar dam and effect of upstream dam break on PMF	Samyadeep Ghosh (LWRE), 10AG62R11		2012
44	Trend analysis of annual extreme rainfall and flood events over Mahanadi river basin	Gouri Rani Pradhan (LWRE), 10AG62R05	Prof. A. Mishra	2012
45	Flood forecasting in Mahanadi river basin using ANFIS and bootstrap based ANFIS models	Pranmohan Kr. Suman (LWRE), 09AG6511	Dr. P. C. Nayak	2011
46	Dam break analysis of Hirakud dam using 1D and coupled 1D-2D models	Mohite Archana Ramchandra (LWRE), 09AG6508		2011
47	Probable maximum flood estimation for Nagarjunasagar Dam	Rajeev Roushan (WRDM), 08AG6509		2010
48	Flood risk modelling for optimal crop planning for delta region of Mahanadi river basin	Natkar Suraj Rajaram (SWCE), 08AG6203		2010

49	Runoff estimation using bootstrap based artificial neural networks (BANNS) and HEC-HMS model	Rucha Rajivkumar Dakave (WM), 08WM6003		2010
50	Hydrological modelling of catchments in Mahanadi river basin using ArcSWAT	Sagar Pachpande (SWCE), 08AG6207	Prof. A. Mishra	2010
51	Design flood estimation using HEC-HMS and L-Moment based regional flood frequency analysis	Siddhartha Biswas (SWCE), 07AG6212		2009
52	Development of a hybrid intelligence system combining ANN and FIS for flood forecasting	Piyush Kumar Singh (WRDM), 07AG6508	Dr. P.C. Nayak	2009
53	Flood inundation modelling and hazard assessment using satellite remote sensing and MIKE FLOOD for the delta region of Mahanadi river basin	Shete Yogesh B (SWCE), 07AG6211		2009
54	Hydrological modelling of a watershed using MIKE SHE	Vinod Sharma (SWCE), 06AG6210	Prof. R. Singh	2008
55	Flood inundation modeling using MIKEFLOOD for the Delta region of Mahanadi River basin	Shivananda Patro (SWCE), 06AG6209		2008
56	Design flood estimation using HEC-HMS	Dibyendu Samantrai (WRDM), 06AG6505		2008
57	Flood forecasting using soft computing techniques	Sagarika Rath (SWCE) 06AG6207	Dr. P. C. Nayak	2008
58	Hydrological modelling of Barakar catchment using AVSWAT-X	Bidhan Sardar (SWCE), 06AG6201	Prof. N. S. Raghuwanshi	2008
59	Hydrological modelling of Damodar catchment using AVSWAT-X	Sane Girish Achyut (SWCE), 06AG6208	Prof. N. S. Raghuwanshi	2008
60	Development of user friendly software for at-site and regional flood frequency analysis using L-moments	Pardeep Kumar (WRDM) 05AG6508		2007
61	Development of optimal water allocation scheduling using OptAll	Chandrashekhar D. Shirwadkar (WRDM) 05AG6502	Prof. R. Singh	2007
62	Performance evaluation and comparison of canal hydraulic models	Shishu Pal Kumar (SWCE), 05AG6208	Prof. R. Singh	2007
63	River flow simulation using MIKE11 and SRTM data	Manoranjan Kumar (WRDM), 05AG6507		2007
64	River flow modeling using HEC-RAS	Rajesh Meena (WRDM) 05AG6510		2007
65	Flood Inundation modeling using MIKE FLOOD and remote sensing data	Biplov Kumar Dan (WRDM), 04AG6503	Prof. N. S. Raghuwanshi	2006
66	Flood inundation simulation for the Mahanadi Delta region using HEC-RAS and GIS	Shifa T. D. (WRDM) 04AG6510	Prof. N. S. Raghuwanshi	2006

67	Flood Forecasting using Neuro-Fuzzy and Neuro-GA Models	Aditya Mukherjee (WRDM-Dual Degree) 01AG3007	Prof. N.S. Raghuwanshi	2006
68	Flood inundation simulation for the delta region of Mahanadi river basin using MIKEFLOOD	Niranjan Pramanik (SWCE), 03AG6202		2005
69	Sensitivity and uncertainty analysis of GIUH based Clark and Nash models	Mahendra Singh Lodhi (WRDM), 03AG6506		2005
70	Development of DSS for design of hydraulic ram using algebraic modeling and transient analysis	Madhav Kumar Mishra (WRDM), 03AG6202	Prof. R.K. Panda	2005
71	Development of a software for regional flood frequency analysis using L-moments	Yavarna Chandrasekhar (WRDM-Dual Degree) 00AG3007		2005
72	Some applications of the Artificial Neural Networks in the fields of hydraulics and hydrology	Manoj Raghuwanshi (WRDM), 02AG6502	Prof. N.S. Raghuwanshi	2004
73	Flood estimation using GIUH based Clark & Nash models	Bhabagrahi Sahoo (WRDM), 01AG6502	Prof. N.S. Raghuwanshi	2003

Number in Progress: 2 (Single: 2 and Joint: 0)

Sl. No.	Title of Project	Name of Student, Specialization & Roll. No.	Name of Co-Supervisor	Year
1	Sub-seasonal streamflow forecasting by integrating satellite remote sensing and AI/ML	Nongmaithem Roshni Devi (LWRE), 25AG62R11		2026
2	Flood risk assessment by integrating satellite remote sensing and AI/ML	Yashvi (LWRE), 25AG62R13		2026

(c) Guidance at B.Tech Level:

Number Completed: 35

Sl. No.	Title of Project	Name of Student, Specialization & Roll. No.	Name of Co-Supervisor	Year
1	Mapping of small water bodies using Sentinel-2 data and deep learning models	Archa C R (20AG36005)		2024
2	Delineation of small water bodies in Nayagarh district using deep learning models	Abhinash Anilkumar (20ME31056)		2024
3	Detection of small water bodies using remote sensing data	Angel Wilson (20AG36003)		2024
4	Flood prediction using deep learning models	Kshitiz Katiyar (20AG3FP51)		2024

5	Flood forecasting using deep learning models	Shaikh Mohd Riyan (20AG35007)		2024
6	One-Dimensional (1D) unsteady flow analysis using HEC-RAS in IIT Kharagpur campus	Lakavath Aravind Kumar (19AG36019)		2023
7	Identification of small water bodies in Mahanadi River basin using Sentinel-1 SAR data from Google Engine	Ankit Sharma (19AG10006)		2022
8	Identification of small water bodies in Mahanadi River basin using Sentinel-2 data from Google Engine	Dale Rajhans Narayan (19AG10010)		2022
9	Classification of diseased and healthy paddy using CNN on UAV based multispectral imageries	Srushti Suresh Thorat (17AG36015)		2021
10	Optimal reservoir operation for flood control and flood forecasting	Jakendra Somarwal (17AG10015)		2021
11	A comparative analysis between extreme gradient boosting and light gradient boosting for real time flood forecasting	Monica Marmit (16AG36006)		2020
12	Real time flood and temperature forecasting using ensemble learning and prophet model	Shubham Patidar (16AG36008)		2020
13	Dynamic neural network model integrated with DWT and MODWT algorithms for real time flood forecasting using different rainfall products	Devjyoti Chandra (15AG36009)		2019
14	Flood forecasting using Recurrent Neural Networks and Gradient Boosting Regressor	Tanay Jagani (15AG36017)		2019
15	Flood forecasting using Support Vector Regression (SVR) and Recurrent Neural Network (RNN)	Prem Shankar (14AG10020)		2018
16	Flood forecasting using seasonal autoregressive integrated moving average model with exogenous inputs	Sudhanshu Vashisht (14AG10030)		2018
17	Flood forecasting using random forest and gradient boosting algorithm	Shubham Sonu (05AG1011)		2018
18	Analysis and simulation of water distribution piping system of IIT Kharagpur campus	Rachit Madhukar (13AG3FP05)		2017
19	Analysis and simulation of water distribution piping system of IIT Kharagpur campus	Vardhman Chhajed (13AG36011)		2017

20	Comparison of random forest and artificial neural network approach for flood forecasting	Vikas Kumar (12AG32002)		2016
21	Flood forecasting using support vector machines	Anil Kumar Jangid (12AG10007)		2016
22	Bivariate flood frequency analysis using copula method	Yash Singh Chauhan (11AG32017)		2015
23	Flood frequency analysis using copula	C R Sandeep (11AG10013)		2015
24	Estimation of crop coefficient from remotely sensed images to improve irrigation scheduling in India	Nayan Mallick (11AG32008)		2015
25	Regional flood frequency analysis of Mahanadi subzone by L-moments and ANN	Ashutosh Kumar Agarwal (11AG10009)		2015
26	Development of a GUI based software for real time flood estimation using TRMM precipitation data	Pranjal Kumar Raut (11AG32007)		2015
27	Development of software for climate change studies using ANN-based coupled VIC model	Sameer Ranjan Rana (11AG32009)		2015
28	Development of a mobile application for flood forecasting in India	Ramendra Prasad (11AG10026)		2015
29	Temporal and spatial trend analysis of rainfall for Mahanadi basin	Kumar Raj (10AG10016)		2014
30	Temporal trends in rainfall in Kharagpur and surrounding areas	Bipasha (10AG1000)		2014
31	Development of a GIS database for Mahanadi river basin	Rohan Jain (08AG1016)		2012
32	Comparison of MOENN, ANFIS and BNN for flood forecasting	Amal Kant (07AG3304)		2011
33	Bivariate flood frequency analysis using Gumbel Hougaard method for copula computation	Akshay Sogani (06AG1020)		2010
34	Bivariate flood frequency analysis using Ali-Mikhail-Haq copula method	Rohit Singh (06AG3809)		2010
35	Development of software for at-site flood frequency analysis using method of MOM and MML	Biranchi Prasad Sahoo (05AG1011)		2009

Annexure-VI

Collaborations and Visits Abroad

(a) Collaborations:

1. Research collaboration with “Institute of Earth-and Environmental Sciences, University of Potsdam, Germany” (Collaborators: Prof. Axel Bronstert, Dr. Gerd Bürger, Ms Lisei Koehn) in a project funded by Deutsche Forschungsgemeinschaft (DFG) – (i) Publication of research papers in high impact journals, (ii) Development of collaborative research proposals, and (iii) Developed a flood forecasting model for Mahanadi river basin.
2. Research collaboration with “Department of Biological Systems Engineering, Virginia Tech, Blacksburg, Virginia, USA (Collaborator: Prof. V. Sridhar) - (i) Publication of research papers in high impact journals, (ii) Development of collaborative research proposals.

(b) Visits Abroad:

1. Institute for Environmental Science and Geography, University of Potsdam, Germany during May 2025 to July 2025 for a renewed research visit to carry out research in the area of ‘Flood Risk Management’ as an Alexander-von-Humboldt Research Fellow.
2. Karlsruhe Institute of Technology (KIT), Institute of Meteorology and Climate Research, Department of Atmospheric Environmental Research (IMK-IFU), Division of Regional Climate Systems, Garmisch-Partenkirchen, Germany during 19-21 June 2025 to deliver a talk on 'Flood Risk Management in Data-Limited River Basins: Bridging Gaps with AI and Modeling' and explore collaboration.
3. Department of Environmental Systems Science, ETH Zürich, Switzerland during 21-24 June 2025 to deliver a talk on 'Flood Risk Management in Data-Limited River Basins: Bridging Gaps with AI and Modeling' and explore collaboration.
4. Institute of Earth and Environmental Science, Potsdam University, Germany during May 2005 to July 2006 for conducting Post-Doctoral research in the area of ‘Flood Modeling’ as an Alexander-von-Humboldt Research Fellow.
5. Civil and Environmental Engineering Section (GITS Sediment Transport Research Group), Universitat Politècnica de Catalunya, Barcelona, Spain during April 2006 for conducting Post-Doctoral research in the area of ‘Flood Modeling’ as an Alexander-von-Humboldt Research Fellow.
6. Adelaide, Australia (03-10 October, 2022) to present research paper entitled "Quantitative and spatial-scale Water-Energy-Food nexus analysis in India – Insight from implemented policies" in the 24th International Commission on Irrigation & Drainage (ICID) Congress & 73rd IEC meeting at Adelaide, Australia.

7. Colombo, Sri Lanka (3-7 January, 2016) to present paper in an International Conference organized by ASCE and EWRI.
8. Potsdam University, Germany (2-9 September, 2012) to participate in a workshop to develop a BMBF and DST sponsored collaborative project.
9. Singapore (4-6 January, 2011) to present paper in International Conference on Water Resources and the Environment (IPWE 2011).
10. Pattaya, Thailand (31 March - 1 April, 2011) to present paper in International Conference on Agricultural Engineering.
11. Wageningen University, Netherlands and Potsdam University, Germany (28 May to 19 June, 2011) to carry out research work for European Union project and to participate in a workshop.

Annexure-VII

Conferences/Short-Term Courses Organized

(a) Seminar/Conference/Workshop Organized:

1. International Conference on "Digital Transformation for Growth—Empowering Agro-Rural Economies Towards Sustainable Viksit Bharat @2047" at Indian Institute of Technology Kharagpur, Kharagpur, India, 4-5, March 2025.
2. First Indo-German Workshop on "HydroRiceTech" at IIT Kharagpur in 2010.
3. Workshop on "Climate change impacts on agriculture and water resources & adaptation strategies" at IIT Kharagpur in 2010.
4. International Conference on "Food Security and Environmental Sustainability (FSES-2009)" at IIT Kharagpur in 2009.
5. A one day Seminar on "Shifting characteristics of rivers using remote sensing" at the Centre for Flood Management Studies, National Institute of Hydrology, Patna on May 02, 2003.
6. A five day training Workshop on "Processing of surface water data" at Centre for Flood Management Studies, National Institute of Hydrology, Patna from January 07-11, 2002.
7. A three day training Programme on "Organization and methods" in collaboration with Ministry of Water Resources, Govt. of India, at the Centre for Flood Management Studies, National Institute of Hydrology, Patna from November 08-10, 2001.
8. A five day training Workshop on "Application of remote sensing and GIS in hydrology and water resources" at Ganga Plains North Regional Centre, National Institute of Hydrology, Patna from August 03-07, 1998.

(b) Short-Term Courses Organized:

1. International Short-term course on "Advanced Training in Land and Water Resources Engineering" for BE students of Tribhuvan University, Nepal from 20 to 22 June, 2019 (Sponsorship Amount: Rs. 3.4 lakh)
2. International Short-term course (International Summer and Winter Term (ISWT)) on "Modeling River Catchment Interactions" from 01 to 12 June, 2015 (Sponsorship Amount: Rs. 3 lakh)

3. International Short-term course (International Summer and Winter Term (ISWT)) on “Geospatial Technologies in Hydrological Modelling” from 16 to 27 June, 2014 (Sponsorship Amount: Rs. 3 lakh)

Annexure-VIII

Administrative Activities

(a) Institute Administrative Activities:

1. Professor-in-Charge, Institute's Water Works, 2016-2019
2. Professor-in-Charge, Institute's Sanitation, 2016-2019
3. Member of Institute's "Campus Master Plan Committee (CMPC)", 2016-2019
4. Advising Civil Construction and Maintenance Section on "Drainage Plan" of IIT Kharagpur campus, 2015 till date
5. Senate Nominee, Central Library Advisory Committee, 2015-2017
6. Question paper setter for GATE 2009, 2010, 2014, 2019, 2020
7. Rector nominee, Gymkhana, 2011-2012
8. Centre-in-charge, Examination Centre for conducting JEE, 2005, 2007-2012
9. Centre-in-charge, Examination Centre for conducting GATE, 2007-2009, 2011, 2013
10. Assistant Warden, Meghnad Saha Hall of Residence, 2007-2009

(b) Departmental Administrative Activities:

At IIT Kharagpur

1. Chairman, Under Graduate (UG) Committee, 2020 till date
2. Chairman, Space Committee, 2020 till date
3. Chairman, New Curriculum Committee, 2021
4. Member, Departmental Administrative Committee (DAC), 2006, 2020 till date
5. Member, Departmental Academic Committee (UG), 2017-2020
6. Member, Departmental Faculty Recruitment Committee, Agricultural and Food Engineering Department, 2017-2020
7. Member, Departmental Faculty Recruitment Committee, Center for Rural Development and Innovative Sustainable Technology, 2017-2020
8. Member, Departmental Faculty Recruitment Committee, School of Water Resources, 2015 till date
9. Chairman, Non-Faculty Scrutiny Committee, 2018-2019
10. Prof-in-Charge, PG Tabulation, 2017-2020
11. Co-coordinator, Agri-Expo, 2015-2016
12. Faculty Co-ordinator, "Project based learning", 2016
13. Member, Departmental Academic Committee (Post-Graduate Research), 2006-2013
14. Member Secretary, Departmental Administrative Committee (PG), 2008-2010
15. Faculty advisor, M.Tech. (Land and Water Resources Engineering), 2010-2013
16. Faculty advisor, Dual Degree (MBA), 2010
17. Faculty advisor, Dual Degree (WRDM), 2010
18. Faculty advisor, M.Tech. (Soil and Water Conservation Engineering), 2009
19. Member, "Sustain-Aqua 2007", 2007
20. Member, "ICFOST-2007", 2007

21. Member, “EDART-2008”, 2008
22. Member, “ACOSINE-2007”, 2007
23. Member, “Krishi O Khadya Mela”, 2005
24. Member, “ETAE-2004”, 2004.

At Centre for Flood Management Studies, NIH, Patna

25. Drawing and Disbursing Officer, 2003-2004
26. Scientist-in-Charge, Remote Sensing Laboratory, 1998-2003
27. Scientist-in-Charge, Computer Laboratory, 1998-2003

(c) Students’ Administrative Activities:

1. Prof-in-Charge, Agricultural Engineering Society (AES), 2008-2020
2. Prof-in-Charge, "PRAKRITI" – A student fest organized by "AES", 2015-2020
3. Member, Gymkhana Elections, 2012
4. Member, Inter IIT Sports Meet Committee at IIT Kharagpur, 2011
5. Observer, Gymkhana Elections, 2010-2011
6. Member, Spring Fest, 2007, 2009
7. Co-chairman, Kshitij, 2008
8. Member, Kshitij, 2007
9. Member, Inter IIT Sports Meet Committee at IIT Guwahati, 2007

Annexure-IX

Other Professional Activities

(a) Members in Committees/Professional Bodies:

1. Expert member of statutory selection committee for the recruitment of Professors and Assistant Professors in the Discipline of 'Irrigation and Drainage Engineering' in the College of Agricultural Engineering and Technology (CAET), Odisha University of Agriculture and Technology (OUAT), Bhubaneswar, 10-12 February, 2026.
2. Member of Assessment/Selection Committee for the recruitment of Scientists in the Institute for Climate Change Studies (ICCS), Kottayam, Kerala constituted by Kerala State Council for Science, Technology and Environment (KSCSTE), 2024
3. Member of Assessment/Selection Committee for the recruitment of Scientists in the Institute for Climate Change Studies (ICCS), Kottayam, Kerala constituted by Kerala State Council for Science, Technology and Environment (KSCSTE), 2023
4. Convener of the Committee for revising syllabus of 'Agricultural Engineering and Technology' discipline for Agricultural Research Service (ARS) examination conducted by the Indian Council of Agricultural Research (ICAR), 2022
5. Member of Assessment Committee for the Assessment Promotion for Scientist upto 'F' in Centre for Water Resources Development and Management (CWRDM), Kozhikode, constituted by Kerala State Council for Science, Technology and Environment (KSCSTE), 2021-2022
6. Member of High Level Expert Committee on "Flood Management" formed by 'Flood Management Improvement Support Centre (FMISC)' Water Resources Department, Govt. of Bihar, 2011-2014
7. Member of Board of Studies of Agricultural Engineering under the Faculty of Engineering for Curriculum Development of B.Tech. (Agricultural Engineering) for Biju Patnaik University of Technology, Odisha, 2019-2021
8. Member of the following professional bodies:
 - ✓ Life Member: International Association of Hydrological Sciences (IAHS), Wallingford, U.K. (Membership No. 2318)
 - ✓ Life Member: Indian Society of Remote Sensing (ISRS), Dehradun, India (Membership No. L-1872)
 - ✓ Life Member: Indian Society for Hydraulics (ISH), Pune, India (Membership No. LM/351)
 - ✓ Life Member: Indian Association of Hydrologists (IAH), Roorkee, India (Membership No. LM-1064)

(b) Reviewer of Journals:

1. Journal of Hydrology, Elsevier
2. Water Resources Research, AGU
3. Science of The Total Environment, Elsevier
4. Advances in Water Resources, Elsevier
5. Journal of Hydrologic Engineering, ASCE
6. International Journal of Climatology, RMetS
7. Journal of Geophysical Research, AGU
8. Hydrological Processes, John Wiley and Sons Ltd.
9. Water Resources Management, Springer
10. Journal of Flood Risk Management, John Wiley and Sons Ltd.
11. Neural Computing and Applications, Springer
12. CATENA, Elsevier
13. Natural Hazards, Springer
14. Journal of Hydroinformatics, IWA
15. Journal of Environmental Management, Elsevier
16. Journal of Water and Climate Change, IWA Publishing
17. Biosystems Engineering, Elsevier
18. Hydrology Research, IWA
19. Computers & Geosciences, Elsevier
20. Journal of Indian Society of Remote Sensing, Springer

(c) PhD Thesis Examined:

1. PhD thesis entitled “Prediction of Flow Duration Curves in Ungauged Basins” of the Department of Civil Engineering, Indian Institute of Science Bangalore in 2026.
2. PhD thesis entitled “Development of a National-scale Flood Risk Forecasting Framework for India Integrating Probabilistic Pluvial Hazard and Socioeconomic Vulnerability” of Centre for Climate Studies, Indian Institute of Technology Bombay in 2026.
3. PhD thesis entitled “Generating High Resolution Surface Albedo with Computer Vision and Remote Sensing Approaches” of the University of Southern Queensland, Australia in 2025.
4. PhD thesis entitled “Streamflow Prediction using a Physically Informed Machine Learning Model for a Himalayan Catchment” of the Department of Hydrology, IIT Roorkee in 2025.
5. PhD thesis entitled “Hybrid Model for Optimization of Hydro Power Projects” of the Department of Civil Engineering, Royal School of Engineering & Technology, Royal Global University, Assam. in 2025.
6. PhD thesis entitled “Unified Global Sensitivity Analyses in 1D-2D Coupled Hydrodynamic Models over Urban and Rural Catchments to Improve Flood Hazard

Mapping, Resilience Assessment and Optimal Adaptation Planning” of the Environmental Science and Engineering Department, Indian Institute of Technology Bombay in 2025.

7. PhD thesis entitled “Assessing Climate Change Impacts on Cotton and Rice Yields Using Crop Simulation Models” of the Department of Civil Engineering, National Institute of Technology, Warangal in 2025.
8. PhD thesis entitled “A Comprehensive Framework for Heat Stress Risk Mapping in India: Evaluating Hazards and Vulnerabilities to Hydro-Climatic Extremes” of the Centre for Climate Studies, Indian Institute of Technology Bombay in 2025.
9. PhD thesis entitled “Rainfall Runoff Modelling for Lower Godavari Basin in a Changing Climate” of the Department of Civil Engineering, Birla Institute of Technology and Science, Pilani (Hyderabad) in 2025.
10. PhD thesis entitled “Data Driven Approaches for Hydrometeorological Forecasting and Water Resources Decision Making” of the Department of Civil Engineering, Indian Institute of Technology Palakkad in 2024.
11. PhD thesis entitled “Enhancing the Reliability of Hydrologic Simulations in Data-Limited Watersheds through Data Assimilation” of the Department of Civil Engineering, Indian Institute of Technology Madras in 2024.
12. PhD thesis entitled “Advancing Stochastic Wind Speed Forecasting Methods with Novel Hybrid Deep Learning Techniques” of the University of Southern Queensland, Australia in 2024.
13. PhD thesis entitled “Optical, Thermal and Microwave L-band Observations for Investigating Soil Moisture at Varying Scales” of the Department of Civil Engineering, Indian Institute of Technology Bombay in 2024.
14. PhD thesis entitled “Solar Ultraviolet Radiation Predictions Under Cloud Cover Effects with Artificial Intelligence Approaches” of the University of Southern Queensland, Australia in 2023.
15. Ph.D. thesis entitled “Flash Flood Vulnerability, Susceptibility & Modeling for Himalayan Mountain River Basins in Uttarakhand” of the Department of Water Resources Development and Management, Indian Institute of Technology Roorkee in 2023.
16. MS thesis entitled “Analysis of Compound Dry and Hot Events Over the Indian Sub-continent” of the Department of Civil Engineering, Indian Institute of Technology Palakkad in 2023.
17. PhD thesis entitled “A Comprehensive Analysis of Extreme Climate Events over India Focusing on Precipitation Extremes and Heatwaves” of the Environmental Science and Engineering Department, Indian Institute of Technology Bombay in 2022.

18. Ph.D. thesis entitled “Hydrologic Characteristic Analysis in Glacierized Basin Considering Climate Impact, Land Use Changes and Elevation Dependent Behaviour of Meteorological Data” of the Department of Water Resources Development and Management, Indian Institute of Technology Roorkee in 2022.
19. PhD thesis entitled “A Novel "safe-fail" Framework for the Design of Urban Storm Sewers with Minimal Flood Consequences” of the Department of Civil Engineering, Indian Institute of Technology Madras in 2022.
20. PhD thesis entitled “Risk Assessment and Mitigation Strategies for Urban Floods under Climate Change” of the Department of Civil Engineering, Birla Institute of Technology and Science, Pilani (Hyderabad) in 2022.
21. Ph.D. thesis entitled “Comprehensive Hydrologic Impact Assessment of Land Use/ Land Cover and Climate Change” of the Department of Water Resources Development and Management, Indian Institute of Technology Roorkee in 2021.
22. PhD thesis entitled “Improved Parameterization in Hydrological Models for better Simulations” of the Department of Civil Engineering, Indian Institute of Technology Madras in 2021.
23. PhD thesis entitled “Climate Extreme Studies in Changing Climate over India” of the Department of Hydrology, Indian Institute of Technology Roorkee in 2021.
24. PhD thesis entitled “Hydro-meteorological Simulations and Projections under Changing Environments” of the Department of Civil Engineering, Indian Institute of Technology Bombay in 2020.
25. PhD thesis entitled “Streamflow and Soil Moisture Forecasting with Hybrid Data Intelligent Machine Learning Approaches: Case Studies in the Australian Murray-Darling Basin” of the University of Southern Queensland, Australia in 2018.
26. PhD thesis entitled “Climate Change Studies over parts of India” of the Department of Hydrology, Indian Institute of Technology Roorkee in 2018.
27. PhD thesis entitled “Development of a Spatially Distributed Snowmelt Runoff Model and its Application in an Eastern Himalayan Watershed under Projected Climate Scenarios” of the Department of Agricultural Engineering, North Eastern Regional Institute of Science and Technology, Nirjuli in 2018.
28. MS thesis entitled “Potential of Graphical Modelling Approach in Multivariate Hydroclimatic Applications: Analysis and Forecasting” of the Department of Civil Engineering, Indian Institute of Technology Kharagpur in 2018.

29. MS thesis entitled “GIS based Landslide Susceptibility Mapping in Darjeeling-Sikkim Himalaya with a view to Understanding Slope Failure Mechanism under both Static & Dynamic Loading” of the Department of Geology and Geophysics, Indian Institute of Technology Kharagpur in 2018.
30. PhD thesis entitled “Calibration of Hydrologic Model Using Remotely Sensed Land Surface Variables” of the Department of Infrastructure Engineering, The University of Melbourne, Australia in 2017.
31. PhD thesis entitled “Statistical Downscaling and Assessing Uncertainty for Regional Projections of Indian Monsoon” of the Department of Civil Engineering, Indian Institute of Technology Bombay in 2016.
32. Ph.D. thesis entitled “Watershed Sustainability Index Framework and its Estimation for a Watershed” of the Department of Water Resources Development and Management, Indian Institute of Technology Roorkee in 2016.
33. PhD thesis entitled “Geoinformatics based Spatial Decision Support System for Flood Disaster Management in Urban and Peri Urban Areas” of CEPT University, Ahmedabad in 2015.
34. PhD thesis entitled “Flood Estimation and Forecasting in Mahanadi River Basin using Soft Computing Techniques” of the Department of Hydrology, Indian Institute of Technology Roorkee in 2011.

(d) Invited Lectures:

1. Invited lecture on 'Flood Risk Management in Data-Limited River Basins: Bridging Gaps with AI and Modeling' at Karlsruhe Institute of Technology (KIT), Institute of Meteorology and Climate Research, Department of Atmospheric Environmental Research (IMK-IFU), Division of Regional Climate Systems, Garmisch-Partenkirchen, Germany during 19-21 June 2025.
2. Invited lecture on 'Flood Risk Management in Data-Limited River Basins: Bridging Gaps with AI and Modeling' at the Department of Environmental Systems Science, ETH Zürich, Switzerland during 21-24 June 2025.
3. Keynote Lecture on “Mathematical Modeling for Flood Risk Management” in a 5-day Workshop on ‘Mahanadi River Basin Management (MRBM)’ organized by Civil Engineering Department, NIT Rourkela from 5th to 9th November 2024.
4. Keynote Lecture on “Recent advances in mathematical modeling for flood risk management” in an International Conference on Climate and Weather-related Extremes (ICCWE- 2022) organized by IIT Roorkee from 19th to 20th September 2022.

5. Lecture on “Application of RS and GIS for drainage planning of township and industrial areas” in a training programme (online) on "Mine Closure & Post Mining Liability Management: Remote Sensing, GIS and Photogrammetry based Planning & Monitoring" organized by Department of Mining Engineering, IIT Kharagpur during 24-28 January 2022.
6. Key note address on “Recent advances in mathematical modeling for flood risk management” in a National Webinar on “Floodplain analysis and mapping” organized by Department of Civil Engineering, The National Institute of Engineering, Mysuru in association with DHI on 8th October 2021.
7. Keynote address on “Recent advances in mathematical modeling for flood risk management” in an International Conference (online) on “Recent Advances in Civil Engineering for Sustainable Development (RACESD-2021)” organized by Department of Civil Engineering, Maulana Azad National Institute of Technology, Bhopal during 13-14 February 2021.
8. Lecture on “Application of RS and GIS for drainage planning of township and industrial areas” in a training programme (online) on "Mine Closure & Post Mining Liability Management: Remote Sensing, GIS and Photogrammetry based Planning & Monitoring" organized by Department of Mining Engineering, IIT Kharagpur during 18-22 November 2020.
9. Lecture on “Reservoir sedimentation survey” in a training course on “Hydrologic and Sediment Monitoring” organized by Damodar Valley Corporation, Soil Conservation Department, Hazaribagh in August, 2008.
10. Lecture on “Application of remote sensing and GIS in watershed and flood management” in a training course on “Application of Geomatics in Soil Conservation” organized by Damodar Valley Corporation, Soil Conservation Department, Hazaribagh in December 2008.
11. Lecture on “Irrigation Water Measurement” in “Advanced Training in Agricultural Engineering (ATAE 2005)” for final year BE students of Tribhuvan Univ., Nepal organized at IIT Kharagpur (every year during June 2005-2017).
12. Lecture on “Application of remote sensing and GIS in hydrological evaluation” in a training course on “Hydrologic and Sediment Monitoring” organized by Damodar Valley Corporation, Soil Conservation Department, Hazaribagh on 21 August 2004.
13. Lecture on “Use of GIS, remote sensing in flood management” in a training program on “Flood Forecasting and Management” organized by WALMI, Patna on 30 January 2003.
14. Lecture on “Role of remote sensing and GIS in flood management” in a training program on “Flood Forecasting and Management” organized by WALMI, Patna on 09 November 2001.

15. Lecture on “Role of remote sensing and GIS in flood management” in a training course on “Flood forecasting and management” organized by WALMI, Patna on 22 March 2001.
16. Lectures on “Ground truth data collection for remote sensing and data analysis” and “Application of remote sensing for land use and land cover mapping” in a training workshop on “Application of remote sensing and GIS in hydrology and water resources” organized by GPNRC, NIH, Patna during 03-07 August 1998.

(e) Trainings Received:

1. Advanced training program on “MIKE 11” organized by Danish Hydraulic Institute, Water and Environment, Denmark at Central Water Commission, New Delhi during 01-03 February 2005.
2. 11-week training course on “Remote sensing and GIS” at National Remote Sensing Agency, Hyderabad during 24 July to 5 October 2000.
3. 5-day training course on “Use of DELPHI computer programming software” organized by MOWR at CWPRS, Pune during 11-15 February 2002.
4. 3-day training course on “ERDAS Imagine 8.5” at NIH, Roorkee during 10-12 December 2001.
5. 5-day training course on “ERDAS IMAGINE 8.3.1” at NIH, Roorkee during 27 April to 02 May 1998.