Faculty Profile: For University Website

Department of Geoinformatics

Name:	Dr. Shanti Shwarup Mahto
Designation:	Assistant Professor
Additional role/ responsibility:	N/A
Educational Qualification:	1. Postdoc (Drought and Water Management) 2. Ph.D. in Earth Sciences and Engineering (Hydrometeorological Extremes and Climate Change) 3. Integrated M.Tech. in Geoinformatics (B.Tech. + M.Tech.)
Awards/ recognition:	1. Visiting Research Scientist (Cornell University, NY, USA), 2023 2. Director's Gold Medal (Indian Institute of Technology Gandhinagar, India), 2023 3. DST-Inspire fellowship (Department of Science and Technology, Govt. of India), 2020 4. University Gold Medal (Central University of Jharkhand (CUJ), Ranchi, India), 2018 5. CSIR-NET (Earth, Atmospheric, Oceanic and Planetary Sciences), 2018 6. UGC-NET (Geography), 2018 7. INSA Summer Research Fellowship (Indian Academy of Science, India), 2017
Area of Interest:	1. Remote Sensing and GIS 2. Surface Water Hydrology 3. Hydrometeorological Extremes 4. Rural and Urban Planning 5. Agriculture and Natural Resource Management 6. Natural Disasters and Climate Change

Courses Taught:	1. Fundamentals of Geospatial Technology and its Applications 2. Geoprocessing and Computer Programming 3. Geoinformatics in Hydrology & Water Resources 4. Geoinformatics in Regional & Urban Planning	
Contact:	(+91) 7050780959	
Email:	ssmahto.dgi@cuj.ac.in (office), ssmahto.clim@gmail.com (personal)	

Brief introduction: max. 200 words

Dr. Shanti Shwarup Mahto is an Assistant Professor in the Department of Geoinformatics at the Central University of Jharkhand (CUJ), Ranchi. His research broadly focuses on the intersection of remote sensing, hydrometeorology, and climate extremes, with specific expertise in remote sensing and GIS, droughts, floods, surface water hydrology, and agriculture, climate change. He earned his Ph.D. from IIT Gandhinagar, where he investigated the drivers and global implications of flash droughts, receiving the Director's Gold Medal for academic excellence.

Dr. Mahto has developed novel methodologies to monitor hydroclimatic extremes using satellite data, hydrological models, and atmospheric reanalysis products. His postdoctoral work at the National University of Singapore advanced understanding of reservoir operations, drought propagation, and climate change impacts on water systems in Southeast Asia. He has also collaborated with many institutions in India (SAC-ISRO, IIT Jodhpur, IIT Gandhinagar), and abroad (NUS Singapore, and Cornell University) on space-based research applications to solve real-life climate and water related problems.

With over 20 peer-reviewed publications in high-impact journals such as Environmental Research Letters, Journal of Climate, Earth's Future, and Communications Earth & Environment, his work has been widely cited and featured in national media. He is actively involved in scientific communities like AGU, EGU, and IMS, and serves as a reviewer for several top-tier journals. His academic background includes an integrated B.Tech–M.Tech in Geoinformatics from CUJ.

Articles Published/ Accepted:

Project (Ongoing)

1. Development of near real-time monitoring and early-warning system for flash drought in India.
2. Development of web portal for satellite-based near real-time reservoir monitoring in India

Research Publications (Total): 22

1. Mahto, S. S., & Mishra, V. (2024). Global evidence of rapid flash drought recovery by extreme precipitation. Environmental Research Letters, 19(4), 044031. https://iopscience.iop.org/article/10.1088/1748-9326/ad300c [IF: 6.94]
2. Maiti, A., Hasan, M. K., Sannigrahi, S., Bar, S., Chakraborti, S., Mahto, S. S., ... & Zhang, Q. (2024). Optimal rainfall threshold for monsoon rice production in India varies across space and time. Communications Earth & Environment, 5(1), 302. https://www.nature.com/articles/s43247-024-01414-7 [IF: 7.29]

	3. Mahto S.S. & Mishra, V. Increasing risk of simultaneous occurrence of flash drought in major global croplands. Environ. Res. Lett. 18, 044044 (2023). https://iopscience.iop.org/article/10.1088/1748-9326/acc8ed [IF: 6.94] 4. Mahto S.S., Nayak, M. A., Lettenmaier, D. P., & Mishra, V. (2023). Atmospheric rivers that make landfall in India are associated with flooding. Communications Earth & Environment, 4(1), 120. https://www.nature.com/articles/s43247-023-00775-9 [IF: 7.29] 5. Mahto S.S. & Mishra, V. Flash drought intensification due to enhanced land-atmospheric coupling in India. J. Clim. 1–31 (2023). https://journals.ametsoc.org/view/journals/clim/37/20/JCLI-D-22-0477.1.xml [IF: 5.38] 6. Nanditha, J.S., Kushwaha, A.P., Singh, R., Malik, I., Solanki, H., Chuphal, D.S., Dangar, S., Mahto, S.S., Vegad, U. and Mishra, V., 2023. The Pakistan flood of August 2022: Causes and implications. Earth's Future, 11(3), p.e2022EF003230. https://agupubs.onlinelibrary.wiley.com/doi/full/10.1029/2022EF003230 [IF: 8.85] 7. Kushwaha, A. P., Tiwari, A. D., Dangar, S., Shah, H., Mahto, S. S., & Mishra, V. (2021). Multimodel assessment of water budget in Indian sub-continental river basins. Journal of Hydrology, 603, 126977. https://doi.org/10.1016/j.jhydrol.2021.126977. [IF: 6.70] 8. Mishra, V., Aadhar, S., & Mahto, S. S. (2021). Anthropogenic warming and intraseasonal summer monsoon variability amplify the risk of future flash droughts in India. npj Climate and Atmospheric Science, 4(1), 1-10. https://doi.org/10.1038/s41612-020-00158-3. [IF: 8.62] 9. Mahto S.S. and Mishra V. (2020). Dominance of summer monsoon flash droughts in India Environmental Research Letters. https://doi.org/10.1088/1748-9326/abaf1d. [IF: 6.94] 10. Mahto S.S. and Mishra V. (2019). Does ERA-5 outperform other reanalysis products for hydrologic applications in India? Journal of Geophysical Research: Atmospheres. https://doi.org/10.1029/2019JD031155. [IF: 5.22]
Seminar/ Workshop/ Conference Participation:	**{Style of seminar/ workshop/ conference should be typed as given below}** 1. Mahto S.S. and Vu Dung., Galelli S., and, Fatichi S. (2023). Inferring reservoir filling strategies and rule curves in Mainland Southeast Asia. H42H-04. AGU Fall Meeting 2023, San Francisco, CA, USA. 2. Mahto S.S. and Mishra V. (2022). Flash drought recovery by cascading extreme precipitation in India: role of the atmospheric rivers. NH42B-0423. AGU Fall Meeting 2022, Chicago, IL, USA. 3. Mallik I., Mahto S.S. and Mishra V. (2022). Causes of increasing hot and dry compound extremes in India. NH42B-0421. AGU Fall Meeting 2022, Chicago, IL, USA. 4. Mahto, S. S., & Mishra, V. (2022). Land-atmospheric coupling amplify the flash drought intensity in India. ID-EGU22-3365. EGU General Assembly, 2022, Vienna, Austria. 5. Nanditha JS, Kushwaha AP, Singh, R, Malik I, and Vegad U and Dangar, S, Mahto, S.S. and Solanki H., Chuphal D, and Mishra, V. The Pakistan flood of August 2022: causes and implications. AGU Fall Meeting 2022, Chicago, IL, USA. 6. Tripathi I.M., and Mahto S.S., and Mohapatra P. Drought analysis using bivariate copulas in the Indian secondary cities. AGU Fall Meeting 2022, Chicago, IL, USA.

	7. Mahto S.S. and Mishra V. (2021). Global teleconnections of monsoon season flash drought and its prediction capability in India. ID-GC55H-0503. AGU Fall Meeting 2021, New Orleans, LA, USA. 8. Kushwaha, A., Mahto, S. S., & Mishra, V. (2021). Occurrence of contrasting dry and wet extremes in a course of sub-monthly time scale. ID-GC55D-0466. AGU Fall Meeting 2021. New Orleans, LA, USA. 9. Mahto S.S. and Mishra V. (2020). Mechanism and Characteristics of Flash Droughts in India and their Evaluation Using Evaporative Soil Moisture Index (ESMI). ID-EGU2020-12616. EGU General Assembly, 2020, Vienna, Austria.
Any other information:	Personal Website: https://sites.google.com/view/dr-ssmahto/ ResearchGate: https://www.researchgate.net/profile/Shanti-Shwarup-Mahto Google Scholar: https://scholar.google.co.in/citations?user=I_fuILkAAAAJ&hl=en GitHub: https://github.com/ssmahto LinkedIn: https://www.linkedin.com/in/shanti-shwarup-mahto-phd-490422121/
Updated as on	30 April 2025