

Degavath Vinod

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Status at NTU: Research Fellow

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Education

- Ph.D. (Water Resources and Ocean Engineering (Civil Engg.)) National Institute of Technology Karnataka, Surathkal. India, 2025.
- M. Tech. (Water Resources Engineering (Civil Engg.)) National Institute of Technology Calicut, Kerala, India, 2021.
- B. Tech. (Civil Engineering), Guru Nanak Institute of Technology, Hyderabad, Telangana, India, 2019.
- Diploma (Civil Engineering), Government Polytechnic Nizamabad, Telangana, India, 2016.

Working & Research Experiences

- December 2025 to Present, Research Fellow, School of Civil and Environmental Engineering, Nanyang Technological University, Singapore
- April 2025 to November 2025, Department of Civil Engineering, Indian Institute of Technology Bombay, Mumbai, India

Research Interests

- Hydroclimatology
- Extreme Value Theory and Dependency Modelling using Max-Stable Processes
- Stationary and Non-stationary Intensity-Duration-Frequency (IDF) curves.
- Flash floods and Flash droughts.
- Coincidental and sequential compound extremes.
- Regionalization in the ungauged basins.

Publications

- **Vinod, D., & Agilan, V.** (2022). Impact of Climate Change on Precipitation Over India Using CMIP-6 Climate Models. In: Dikshit, A.K., Narasimhan, B., Kumar, B., Patel, A.K. (eds) Innovative Trends in Hydrological and Environmental Systems. Lecture Notes in Civil Engineering, vol 234. Springer, Singapore. https://doi.org/10.1007/978-981-19-0304-5_13
- **Vinod, D., & Agilan, V.** (2024). Ranking of CMIP 6 climate models in simulating precipitation over India. Acta Geophysica, 72(5), 3703–3717. <https://doi.org/10.1007/s00704-025-05882-5>
- **Vinod, D.*, & Mahesha, A.** (2024). Large-scale atmospheric teleconnections and spatiotemporal variability of extreme rainfall indices across India. Journal of Hydrology, 628(December 2023), 130584. <https://doi.org/10.1016/j.jhydrol.2023.130584>

- **Vinod, D.***, & Mahesha, A. (2024). Modeling nonstationary intensity-duration-frequency curves for urban areas of India under changing climate. *Urban Climate*, 56, 102065. <https://doi.org/10.1016/j.uclim.2024.102065>
- Archana, T. R., **Vinod, D.***, & Mahesha, A. (2024). Decadal Trends and Climatic Influences on Flash Droughts and Flash Floods in Indian Cities. *Urban Climate*, 58, 102143. <https://doi.org/10.1016/j.uclim.2024.102143>
- Gautam, J., O, S., **Vinod, D.***, & Mahesha, A. (2024). Evaluation of GPM IMERG satellite precipitation for rainfall-runoff modelling in Great Britain. *Hydrological Sciences Journal*, 69(14), 2010–2025. <https://doi.org/10.1080/02626667.2024.2394172>
- Benny, B., **Vinod, D.***, & Mahesha, A. (2024). Fortnightly Standardized Precipitation Index trend analysis for drought characterization in India. *Theoretical and Applied Climatology*, 155(6), 4891–4908. <https://doi.org/10.1007/s00704-024-04905-x>
- Raj, R., **Vinod, D.***, & Mahesha, A. (2024). Downscaling Algorithms for CMIP6 GCM Daily Rainfall over India. *Journal of Earth System Science*, 133(104), 1–26. <https://doi.org/https://doi.org/10.1007/s12040-024-02323-1>
- **Vinod, D.***, & Mahesha, A. (2025). Characterizing extreme rainfall using Max-Stable Processes under changing climate in India. *Journal of Hydrology*, 655, 132922. <https://doi.org/10.1016/j.jhydrol.2025.132922>
- **Vinod, D.***, & Mahesha, A. (2025). Modeling non-stationary 1-hour extreme rainfall for Indian river basins under changing climate. *Journal of Hydrology*, 652, 132669. <https://doi.org/10.1016/j.jhydrol.2025.132669>
- **Vinod, D.***, & Mahesha, A. (2025). Spatial Dependence of Extreme Rainfall and Development of Intensity–Duration–Frequency Curves Using Max-Stable Process Models. *Journal of Hydrologic Engineering*, 30(1), 4024053. <https://doi.org/10.1061/JHYEFF.HEENG-6326>
- HariKrishna, M., **Vinod, D.***, Desai, S., & Mahesha, A. (2025). A multivariate index-flood approach for flood frequency analysis of ungauged watersheds: a case study on state of Kerala in India. *Acta Geophysica*, 73, 4691–4708. <https://doi.org/https://doi.org/10.1007/s11600-025-01623-4>
- Kumar, G. P., **Vinod, D.**, Dwarakish, G. S., & Mahesha, A. (2025). Multi-criteria decision-making and machine learning-based CMIP6 general circulation model ensemble for climate projections in a tropical river basin in India. *Acta Geophysica*, 73, 4999–5018. <https://doi.org/10.1007/s11600-025-01623-4>
- Renuka, S., **Vinod, D.***, & Mahesha, A. (2025). Modeling of short-term meteorological drought under changing climate in Gujarat, India. *Theoretical and Applied Climatology*, 156(11), 641. <https://doi.org/10.1007/s00704-025-05882-5>
- Rose, M. A. J., **Vinod, D.**, & Saicharan, V. (2026). The role of seasonal temperature anomalies in modulating extreme rainfall of Kerala, India. *Acta Geophysica*, 74(1), 59. <https://doi.org/10.1007/s11600-025-01784-2>