Event-Based vs. Continuous Hydrological Modeling with HEC-HMS: A Review of Use Cases, Methodologies, and Performance Metrics

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Supplementary File

Table S1. Top Institutions and Productive Authors on HEC-HMS Research during 2000 – 2023.

Top Productive Institutions				Top Productive Authors		
Rank	Institution	TP	Country	Rank	Author	TP
1	Islamic Azad University	25	Iran	1	Wang, Y.	13
				2	Ahmad, S.	12
2	Hohai University	20	China	3	Babel, M.S.	9
3	Chinese Academy of Sciences	20	China	4	Saghafian, B.	9
4	Ministry of Education of the People's Republic of China	15	China	5	Gao, Y.	8
5	King Abdulaziz University	15	Saudi Arabia	6	Kalra, A.	7
6	Universiti Teknologi Malaysia	14	Malaysia	7	Anggraheni, E.	6
7	Asian Institute of Technology Thailand	13	Thailand	8	Gumindoga, W.	6
8	IHE Delft Institute for Water Education	13	Netherlands	9	Kuntiyawichai, K.	6
9	Islamic Azad University, Science and Research Branch	13	Iran	10	Sharif, H.O.	6
10	University of Tehran	12	Iran	11	Simonovic, S.P.	6

11	Arba Minch University	12	Ethiopia	12	Yusop, Z.	6
12	Universiti Putra Malaysia	10	Malaysia	13	Chu, X.	5
13	University of Nevada, Las Vegas	10	United States	14	Gunathilake, M.B.	5
14	Howard R. Hughes College of Engineering	10	United States	15	Mahmood, R.	5
15	University of Illinois Urbana-Champaign	9	United States	16	Mazumdar, A.	5
16	National Technical University of Athens NTUA	9	Greece	17	Mishra, B.K.	5
17	King Saud University	8	Saudi Arabia	18	Razmkhah, H.	5
18	Khon Kaen University	8	Thailand	19	Shrestha, S.	5
19	Mohammed V University in Rabat	8	Morocco	20	Sutjiningsih, D.	5
20	Anna University	8	India			

TP – Total publication

Source: Author's elaboration based on data from www.scopus.com (accessed on 25th November 2024).

Table S2. The Most Productive Journals with the Most Cited Articles on HEC-HMS Research during 2000 – 2023.

S/N	Journal	TP	TC	PY_start	Most cited article	No. of citations	Publisher
1	Water Switzerland	73	1309	2015	Comparison of spatial interpolation schemes for rainfall data and application in hydrological modeling	94	MDPI
2	Iop Conference Series Earth and Environmental Science	33	136	2014	Urban Stormwater Management Model and Tools for Designing Stormwater Management of Green Infrastructure Practices	46	Institute of Physics Publishing
3	Water Resources Management	29	912	2008	Flood intensification due to changes in land use	151	Springer
4	Journal Of Hydrologic Engineering	27	826	2002	Coupling HEC-HMS with atmospheric models for prediction of watershed runoff	125	ASCE
5	Modeling Earth Systems and Environment	24	522	2016	Flash flood risk assessment for upper Teesta river basin: using the hydrological modeling system (HEC-HMS) software	55	Springer
6	Arabian Journal of Geosciences	19	321	2014	Rainfall-runoff modelling of Doddahalla watershed—an application of HEC-HMS and SCN-CN in ungauged agricultural watershed	65	Springer

7	Journal Of Hydrology	19	1255	2007	Assessing the effects of urbanization on annual runoff and flood events using an integrated hydrological modeling system for Qinhuai River basin, China	318	Elsevier
8	Natural Hazards	19	436	2010	Impacts of urbanization on flooding of a coastal urban catchment: a case study of Mumbai City, India	94	Springer
9	Hydrology	18	501	2016	Rainfall-runoff modeling using the hec-hms model for the al-adhaim river catchment, northern Iraq	75	MDPI
10	Hydrological Sciences Journal	14	281	2005	Prediction and modelling of rainfall–runoff during typhoon events using a physically-based and artificial neural network hybrid model	70	Taylor and Francis

TP – total publication; TC – total citation; PY_start – first year of publication; MDPI – Multidisciplinary Digital Publishing Institute; ASCE – American Society of Civil Engineers

Source: Author's elaboration based on data from www.scopus.com (accessed on 25th November 2024)