



Urban Hydrometeorology: an overview and bibliometric analysis of published research

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Urban hydrometeorological (UHM) research is important for managing the challenges that arise from the complex interactions between climate change, meteorological processes and the water cycle in urban environments. It provides valuable insights for sustainable urban development, infrastructure planning, climate change adaptation, public health and improving the overall resilience of cities to weather, water and climate-related challenges. This bibliometric research analyses published literature on the research topic of UHM. In total, 507 studies were assessed in the period 1975-2023 based on the Web of Science database, covering almost half of the century of UHM research. Three subperiods with different publication trends were noticed. The first publication subperiod is the longest (1975-2020), but with the fewest publications (45), while the second subperiod is substantially shorter (2011-2017), but with a significant increase in the number of publications (122). The third subperiod is the shortest, i.e., from 2018 to 2023, and it is characterized by further substantial increase in the number of publications (340); although the shortest, the third subperiod contains 67% of published UHM studies, thus showing the increased interest in this research topic during the recent years. Furthermore, majority of UHM studies were published in the research fields of: 1) Environmental Sciences (175 studies), 2) Water Resources (165 studies); and 3) Meteorology and Atmospheric Sciences (150 studies). Countries/regions leading the way in UHM research and publishing are the USA, China and England, while there is a noticeable lack of UHM studies from Global South. Regarding sustainable development, UHM studies mostly contributed to the research on SDG 13 (Climate Action), SDG 6 (Clean Water and Sanitation) and SDG 11 (Sustainable Cities and Communities). The keyword analysis further revealed the changes in the main research themes during the last decades of the 20th century and the first decades of the 21st century. This study can be beneficial for those interested in acquiring more knowledge about UHM research and its application.