



water

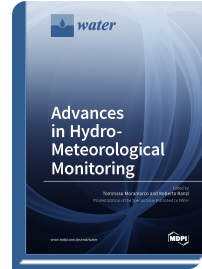


*Special Issue Reprint*

## Advances in Hydro-Meteorological Monitoring

[www.mdpi.com/books/reprint/770](http://www.mdpi.com/books/reprint/770)

Edited by  
Tommaso Moramarco  
Roberto Ranzi



ISBN 978-3-03842-977-7 (Softback)  
ISBN 978-3-03842-978-4 (PDF)

Basin hydrology is related to the soil–atmosphere interaction driven by several blended processes constrained by the space–time variability of precipitation and soil moisture, along with overland flow and flood routing in natural channels. The emerging technologies for the monitoring and prediction of the spatial and temporal distribution of rainfall and soil moisture over a catchment, as well as the hillslope and river runoff, are of considerable interest to predict the hydrological responses of a catchment. In this context, this Special Issue, with its eleven theoretical and applied contributions, aims to shed light on the more recent advances in ground observations and remote sensing products, as well as on the benefits resulting from the integration of technological innovation and the development of new ideas in hydrology science. To this purpose, the accepted articles, written by leading researchers in their field, are intended to present and discuss experimental analyses at the catchment scale in terms of: a) intensive measurement campaigns of soil moisture by in situ sensors, remote sensing and modelling approaches; b) discharge monitoring also for high floods, by leveraging advanced technology for ground surface velocity measurements and spaceborne observations of water surface elevation, river width and slope; c) solid precipitation-measuring methods and the selection of snow gauge stations by merging meteorological, hydrological and remote sensing datasets; d) changes in daily precipitation of different intensities over large river basins along with the identification of the space–time rainfall field for different climatic regions ; and finally e) spatial evaporation patterns in different climate regions and assessment of the dominant climate factors affecting the evaporative demand of the atmosphere. Hopefully this Special Issue provides different useful advancements in emerging technologies for the monitoring of key hydrological variables that will support the design of a scalable system of operational tools leading to mitigation measures and reliable real-time warning systems.



Order of key hydrological variables that will support the design of a scalable system of operational tools leading to mitigation measures and reliable real-time warning systems.  
[www.mdpi.com/books/reprint/770](http://www.mdpi.com/books/reprint/770)

MDPI Books offers quality open access book publishing to promote the exchange of ideas and knowledge in a globalized world. MDPI Books encompasses all the benefits of open access – high availability and visibility, as well as wide and rapid dissemination. With MDPI Books, you can complement the digital version of your work with a high quality printed counterpart.



### **Open Access**

Your scholarly work is accessible worldwide without any restrictions. All authors retain the copyright for their work distributed under the terms of the Creative Commons Attribution License.



### **Author Focus**

Authors and editors profit from MDPI's over two decades of experience in open access publishing, our customized personal support throughout the entire publication process, and competitive processing charges as well as unique contributor discounts on book purchases.



### **High Quality & Rapid Publication**

MDPI ensures a thorough review for all published items and provides a fast publication procedure. State-of-the-art research and time-sensitive topics are released with a minimum amount of delay.



### **High Visibility**

Due to our global network and well-known channel partners, we ensure maximum visibility and broad dissemination. Title information of books is sent to international indexing databases and archives, such as the Directory of Open Access Books (DOAB), and the Verzeichnis Lieferbarer Bücher (VLB).



### **Print on Demand and Multiple Formats**

MDPI Books are available for purchase and to read online at any time. Our print-on-demand service offers a sustainable, cost-effective and fast way to publish MDPI Books printed versions.