

Special Issue

Winter Hydrology and Its Critical Role in Water Resources Under Climate Change

Message from the Guest Editors

Winter hydrology governs how snow and frozen soils store and release water across cold regions, shaping runoff, recharge, and baseflow throughout the year. Climate warming is reducing snowpacks, advancing melt timing, and shifting streamflow from summer to winter and early spring. These changes undermine the buffering function of seasonal snow, increase flood and drought risks, and threaten water security for hundreds of millions of people. This Special Issue invites research on winter hydrological processes and their implications for water resources under climate change. Topics include snow accumulation and melt, permafrost, glacier and mountain hydrology, groundwater-surface water interactions, hydrochemical and isotopic tracing, extreme events, and adaptive water management. We especially encourage studies that combine field observations, remote sensing, numerical modeling, data assimilation, and decision-support tools to inform sustainable adaptation strategies.

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Message from the Editor-in-Chief

In the context of global changes, the sustainable management of water cycles, going from global and regional water cycles to urban, industrial and agricultural water cycles, plays a very important role on the water resources and on their relationships with food, energy, biodiversity, ecosystem functioning and human health. *Water* invites authors to provide innovative original full articles, critical reviews and timely short communications and to propose special issues devoted to new technological and scientific domains and to interdisciplinary approaches of the water cycles. We ensure a critical review process and a quick turnaround between submission and final decision.

Editor-in-Chief

Dr. Jean-Luc PROBST

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