



## Progresses and Gaps on Monitoring of Snow and Its Components at the Local, Regional to Global Scale and Its Applications

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Deadline for manuscript  
submissions:

**closed (31 October 2023)**

### Message from the Guest Editors

Dear Colleagues,

Snow plays an essential role in the climatic and environmental challenges of the 21st century. The snow cover represents a key source of global water resources and climate regulation, and has shown high sensitivity to the warming climate. The quantity and quality of collected snow information is also constantly increasing with the possible novel automated methods provided by recent technological development for cheaper and easier monitoring. During the last several decades, instrumentation and measurement techniques have advanced quickly, providing a significant amount of new information about the extent and properties of snow. The forecasting of snow-related hazards in Europe is mostly performed at the country or regional level, and heavily relies on the concurrent meteorological factors and snowpack properties, which are usually acquired from point measurements or physical models. A big challenge is bridging information from microstructural scales of the snowpack up to the grid resolution in models, and then to provide knowledge-based information on potential impacts to society, economy, and safety.





an Open Access Journal by MDPI

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## Message from the Editor-in-Chief

Understanding the Earth's origin and its bio-geological evolution, the multiple implications of the geosciences (as a coherent set of interconnected disciplines), and the sociocultural and ethical interdisciplinary approaches, will be crucial for a better understanding of Nature, and also for undertaking scientifically based political decisions.

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