Special Issue

In Situ Data on Snow and Sea Ice in Polar Regions

Message from the Guest Editor

Monitoring polar snow and sea ice is critical for understanding climate change, protecting ecosystems, and guiding policy. However, limited in situ data hinders accurate modeling and predictions. These ground-truth measurements refine satellite models and track trends in ice loss and snow cover. International campaigns—using icebreakers, research stations, and UAVs—collect high-resolution data, but harmonization is needed to standardize methods (e.g., snow depth, ice thickness). This Special Issue seeks studies on:

- **Climate & Ecosystems:** *In situ* data's role in tracking climate impacts, protecting polar ecosystems, and informing global policy.
- **Model Validation:** Ground-truthing satellite/remote sensing data to improve ice/snow dynamics and trend predictions.
- **Field Campaigns:** Methods for collecting and inventorying snow/sea ice data (e.g., expeditions, UAVs).
- **Data Harmonization:** Standardizing measurements (thickness, roughness) for cross-study comparability.

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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 coherentset of interconnected disciplines), and the sociocultural and ethical interdisciplinary approaches, will be crucial for a better understanding of Nature, and also for undertaking scientificallybased political decisions.
We are committed to drive *Geosciences* to a position in which it is recognized for its high-quality, cutting-edge research and scientific influence, and strongly encourage and invite your participation and manuscripts.

Editor-in-Chief

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