

Special Issue on  
**Effects of Recent and Prospective Meteorological  
Variability on Cryospheric Processes**

# CALL FOR PAPERS

Transient and future climate change is affecting the cryospheric environment worldwide. Climate and atmospheric dynamics influence cryospheric patterns in many ways. Increasing temperature primarily leads to decreased snowfall precipitation during the cold season and subsequently earlier snowmelt at thawing, thus contributing to decreasing ice accumulation over the long term.

Modified precipitation patterns, especially decreasing precipitation during winter, also affect cryospheric renewal and survival. More infrequent snowfall events and subsequent ice exposure or coverage by debris decrease the albedo of cryospheric areas, thereby accelerating down wasting. Atmospheric pollution (dust, black carbon) also affects albedo of ice and snow while accelerating cryospheric fusion. Furthermore, these impacts of modified albedo on cold surfaces can affect global energy budget. Cloud cover and water vapor dynamics may also give feedback on climate change.

The modified cryospheric water cycle in continental areas affects water and food security, energy production, and ecosystem services. Polar ice melt, and to a lesser extent melting of continental ice, may provide sea level rise and threaten animal survival.

Modification of cryospheric processes is further associated with natural hazards (e.g., for snow/ice avalanches, glacial ruptures, GLOFs, thaw driven floods, and landslides) due to more intense dynamics of snow/ice masses.

This special issue will therefore welcome contributions broadly tackling the theme of recent and prospective atmospheric dynamics under meteorological change and the fallout on cryospheric environment, in an as wide as possible array of geographic and climatic conditions.

Potential topics include but are not limited to the following:

- ▶ Modified snow/ice dynamics in cold environments
- ▶ Climatic trends of temperature, precipitation, and other variables
- ▶ Climatic and cryospheric projections and sensitivity analysis
- ▶ Feedback between cryosphere and atmospheric dynamics
- ▶ Modified albedo and energy budget of cold areas
- ▶ Effect of a changing cryosphere (i.e., snow, glacier ice, and soil/permafrost) on continental water availability
- ▶ Evolution of cryosphere in the polar areas

Authors can submit their manuscripts through the Manuscript Tracking System at <https://mts.hindawi.com/submit/journals/amete/erpc/>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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