



Permafrost Environments

3F - Polar Coastlines in Transition: Arctic, Antarctic, Offshore and Shelf Perspectives

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Polar coastlines make up over one-third of the global coastline total and are among the most dynamic in the world. Due to climate change polar coastlines are increasingly vulnerable to rapid change. Patterns of Arctic coastal change are mostly associated with decreased sea ice cover which is leaving coasts exposed to waves and storm action for longer each year. Additional influential factors include permafrost degradation, storm-surge flooding, and intensified sediment supply from glacierised catchments. These changes have wide-ranging impacts on circum-polar Arctic coastal communities through the destruction of culturally important sites and modern infrastructure.

In the Antarctic region accelerated deglaciation has led to the exposure of new coastlines where permafrost-related processes and fluxes of sediments from paraglacially transformed glacial landforms control coastal dynamics. In both regions, climate warming has triggered extreme processes including accelerated permafrost thermoerosion, destabilization of coastal slopes by periglacial processes or landslides leading to formation of tsunami waves that profoundly change the functioning of fragile polar coastal environments.

This session invites submissions that will improve our understanding of polar (Arctic and Antarctic) coastal dynamics on local and regional scales. We encourage submissions focusing on both sub-aerial and sub-aqueous processes driving changes to coastal morphology, and are also interested in submissions which discuss rates of change and socio-economic impacts. The objective of our session will be to raise interest in the topic and provide a platform for discussions on various aspects of coastal change and its impact on the resilience of polar environments and societies. We particularly encourage submission of contributions from members of ACD (Arctic Coastal Dynamics), CACOON (Circum-Arctic Coastal Communities Knowledge Network), Permafrost Coastal Systems Network (Per-CS), Nunataryuk, and EO4PAC groups.

Keywords:

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