6A - Implications of Thawing Permafrost on Water Resources in Cold Regions

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Permafrost drives surface and subsurface hydrological regimes in northern and mountainous regions. Its thaw is opening new hydrological pathways and activating biogeochemical processes that have substantial ramifications for water availability and water quality. This session aims to unravel the implications of permafrost thaw on water resources, with a special focus on permafrost hydrogeology and the transport of geogenic and anthropogenic contaminants.

We welcome contributions from various themes that centre around water resources in permafrost regions, including physical hydrogeology and hydrology, water quality and water chemistry, management of mining and industrial wastewater, geotechnical considerations of thawing permafrost, and local and indigenous perspectives on water in a changing climate. The anticipated outcome of this session is to provide an overview of the challenges, opportunities, and required adaptations that will accompany the transition from perennially frozen to thawed conditions in the subsurface.

Keywords: Permafrost Thaw, Water Resources, Hydrogeology

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