



## Permafrost Hydrology and Wetland Dynamics

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### 6C - Arctic Wetlands in a Changing Climate

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Half of the world's wetlands are located in Arctic regions including peatlands, wet tundra, shallow water areas, and coastal marshes. Arctic wetlands are key components of global biogeochemical cycles, especially for carbon and nitrogen, but also for various contaminants. They are biodiversity hotspots and key breeding and moulting habitat for birds. Intact wetlands also have a hydrological storage function. Climate change threatens to alter some of the main functions of these sensitive wetland systems. For example, the hydrological balance of wetlands in permafrost regions is sensitive to changes in thaw depth, precipitation and evapotranspiration, as well as to changes in geomorphology and local topography caused by permafrost thaw. Such changes have effects on all wetland functions. In addition to uncertainties about wetland resilience and adaptability to climatic warming, the current properties of Arctic wetlands are still not comprehensively understood and quantified.

In this session, we invite contributions related to Arctic region and permafrost wetlands from various scientific fields using a wide range of methods, such as field observations, laboratory analyses and experiments, modelling and simulations, and remote sensing. We particularly encourage studies on (1) carbon and nitrogen cycling, including stocks and fluxes; (2) vegetation change and its effects on wetland ecosystems; (3) ecology of wetland organisms; (4) major contaminants such as mercury and their mobility or stability; and (5) wetland ecosystem response to disturbance events such as wildfire, permafrost thaw, and changes in hydrology.

**Keywords:** Hydrology, Ecology, Permafrost Biogeochemistry

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