

Metadata Details

Title

Characterising permafrost degradation in Svalbard: Aerosols, GHGs and Freeze-Thaw Dynamics and its impacts on ecosystem

Science Keywords

Category	Atmosphere
Topic	Aerosols
Expedition Year	2018-2019
ISO Topic	Meteorology

Summary

Abstract

The specific objectives are as follows: A. Characterizing Ecosystem Scale Dynamics of Permafrost Thaw: i. Identify thermokarst areas in Svalbard and Ny-Alusend areas by long-term satellite data and reconnaissance surveys. ii. Develop a database of physical characteristics of these areas on an on-going basis. iii. Develop intra and inter-seasonal characteristics of thermokarst landscape areas using a range of measurements such as atmospheric GHGs (CO₂ and CH₄), optical surface reflectance, narrowband and broadband albedo and net energy fluxes at the surface level and various meteorological parameters. iv. Quantify aerosol transport and impacts on snow spectral albedo. B. Identifying Permafrost degradation through Geochemical Signatures: i. Establish an isotope mixing model that will quantify the variability of downstream water from glacial melt, permafrost/active layer thaw and rain over the field campaign of 2018.

Purpose

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Data Center