Geophysical Research Abstracts
Vol. 19, EGU2017-19464-1, 2017
EGU General Assembly 2017

Source-to-mainstem: hydrochemical changes of the evolving surface drainage in the valley Brøggerdalen, NW Spitsbergen

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Present-day paraglacial areas arising in the High Arctic during the Holocene are evidence of large changes in relief and deposits of polar regions. Geosuccession, thus the change of the morphogenetic domain from subglacial to subaerial one implies changes of morphogenetic factors and processes in areas recently exposed to the ice covers. The effect of changes in the morphogenetic domain is the constitution of a new set of landforms. Among the dominant processes that transform contemporary areas freed from the glaciers are slope and fluvial processes expanded in periglacial conditions. During the summer campaign of the project "Late-glacial and present landscape evolution following deglaciation in a climate-sensitive High-Arctic region" we made two field mapping, namely geomorphological and hydrogeochemical in the area left by the retreating glacier Brøgger in the valley Brøggerdalen west of Ny-Ålesund on Brøggerhaløvya (NW Spitsbergen). Intensive glacier recession since the Little Ice Age has created a new set of landforms, for which we examined the chemical properties of sediments and water flowing down the slopes of the valley to the valley floor, i.e. main stem of Brøggerelva. Hydrochemical transformations of fresh waters flowing in paraglacial watercourses on the background of the geochemical properties of the surface sediment covers became the main objective of the study. On the poster we present the results of field studies, the spatial distribution of hydrochemical properties of surface water, alternating directions hydrochemical these waters and pointed out the nature of the water transition from the slope system to a fluvial one. It was found that despite the major relief changes in the valley of the Brøggerbreen contemporary hydrochemical transformations of fresh waters do not stand up now too great diversity.