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**Title:** *The role of above average precipitation events in high Arctic catchments relief development*

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After the intensive snow melting season, at the turn of spring and summer, the operation of fluvial processes in catchments of high Arctic (observed on the example of Billefjorden basin, central Spitsbergen, Svalbard), stabilize at an average level, because of relatively constant water supply from ice ablation (in partly glaciers covered catchments) and gradually decreasing snow-melt and permafrost thaw supply (main agent in non glaciers covered catchments). Quiet periods are interrupted with flood events triggered by different meteorological factors. In the dry climate of the area under study, the most significant are high rates of rainfalls, initiating a wide range of processes in the slope and channel systems. There is no more than one per year frequency of important landscape altering events.

Water discharge, transport of dissolved sediments, solids and bedload were measured in the glacierized Ebba valley system, with special attention paid to periods of processes intensification and their morphological effects. The high amount of discharge rise, in river channels, suspended solids transportation accompanied with diluted ions concentration decrease. Single event is carrying the equivalent of suspended solids from 2.5 years in 2 days. Concentrated water flow on slopes mobilize coarser sediment fractions (up to 0.1 m of diameter), transported as bedload, in the amount of up to 300 gs<sup>-1</sup>. Gravelly-cobble sediments form extra channel embankments, alluvial fans, some entering the fjord and changing coastline course.

The effects of floods are not essential in the valley relief development, but some of their traces stay visible over decades.