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**Title:** FLUVIAL DYNAMICS ON BERTILBREEN OUTWASH PLAIN

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The study of fluvial dynamics of Bertilbreen river on the glacier foreland outwash plain has been carried out in summer 2012. The goal of the study is to identify the threshold discharge leading to significant changes in fluvial morphology of the area. Quantification of material amount transported by the river is a second important goal as well. This area has been identified as highly dynamic during the 2011 season field campaign. Hydrological monitoring has been set up last year and continued throughout 2012 season including manual discharge measurement. Two timelapse cameras have been installed to monitor the study area in regular intervals. Apart that, a detailed digital elevation model (DEM) was produced with help of laser scanning (LiDAR). This has been done in two timesteps (7 days) with intention to compare the two DEMs and quantify precisely the amount of transported material as well as change in drainage system. Fluvial dynamics of outwash plain is strongly related to atmospheric forcings influencing discharge in the channel. Precipitation was identified as a main factor influencing fluvial dynamics. A secondary factor was a high level of solar radiation (and temperature) leading to massive glacier melting. The LiDAR study period was characterised by very stable weather conditions and subsequently also the hydrological regime was very stable leading to almost no change in drainage system. Significant changes has been observed only from timelapse cameras in periods out of the LiDAR study. 7 high fluvial dynamics events have been identified during the 25 days of time lapse shooting. Typical duration of such event was approximately 5-10 hours. No absolute discharge threshold level for starting the fluvial activity was observed, but the change in discharge was the triggering factor. It has been proven, that the level of change needed to start the fluvial activity is inversely proportional to the absolute level discharge.

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