

Structure and evolution of the colluvial slopes in southern Spitsbergen

Struktura i ewolucja stoków usypiskowych południowego Spitsbergenu

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The main objective of research is precise detection of the internal structures in the colluvial slopes in southern Spitsbergen. The slopes are one of the most common and the most dynamic sedimentary environmental in the mountain polar regions. Collected information about deposited rock-material, allow determination of evolution of the slopes since the beginning of the deglaciation up to the present moment. The aim of this project is the description of evolution models of the colluvial slopes in southern Spitsbergen as well as answering to questions about: fluctuation of the intensity of the morphogenetic processes and the dominant mechanisms of the destruction of basement rock. The last stage of this project will be comparison of the results from Spitsbergen and the older colluvial slopes in the High Tatra Mountains as well as reference to course of the last glaciation (deglaciation) of this region. The project assumes using set of research methods, which will allow precise recognition of issue on the large study area. The basic methods are the geophysical investigations: 1) electrical resistivity tomography (ERT); 2) ground penetrating radar (GPR). The results will bring significant knowledge in understanding of development of the sedimentary environment (such us: morphogenetic processes, their variability, dynamics and determinants) and its climatic sensitivity in the part of the Arctic.