

Abstract

The focus of this bachelor's thesis is snow depth variability at local scale and modern methods of snow depth measurement with high accuracy, precision and resolution. The main goal is to provide an overview of current research in this area, give comparison of the most widely used methods and outline their most appropriate fields of application. A part of this work is also dedicated to an evaluation of snow distribution over a study area in Filipohuťský creek basin in Šumava (Bohemian Forest) and to an assessment of the impact of selected variables on snow depth variability using multiple linear regression models. This is done using manual snow depth measurement data and local digital surface model with high resolution. Multiple linear regression models capture the snow depth variability more precisely than models based on ordinary kriging, nevertheless the regression coefficients of selected predictors are too inconsistent to confirm their effect.

Key words: snow depth, photogrammetry, laser scanning, multiple linear regression