

ABSTRACT

Snow is an important factor in alpine forest-free area and character of snow accumulation and degradation affect soil water availability; snow's insulation, soil temperature variations and regelation. Snow can influence flora and fauna, evolution of soils and occurrence of periglacial forms. This thesis deals with the distribution of snow cover and influencing factors of spatial pattern of snow depth. The research of snow cover distribution was based on periodic field measurements of snow depths in winters 2009/2010 and 2010/2011. For evaluation and interpretation of measurements, data were statistically processed in programs ArcMap and STATISTICA 10. Based on statistical analysis, series maps of snow cover distribution was produced. Altitude, curvature, heat-load index, the orientation of the locality relative to the east (folded aspect with 0° towards the east) and percentage of graminoid vegetation were the most important variables explaining snow depth. Furthermore the results of terrain measurements confirmed distribution snow cover of previous works.

Key words: snow cover distribution, depth of snow, physical-geographical factors, modelling and measurement of snow cover, regression analysis, alpine forest-free area, east Krkonoše mountains