Spectroscopic and statistical methods for detailed mapping of vegetation in the Krkonoše Mountains National Park

Abstract

The diploma thesis is focused on the detailed classification of vegetation in the Krkonoše Mountains National Park using DCA (Detrended Correspondence Analysis) ordination method in combination with PLSR (Partial Least Square Regression) analysis. The resulting regression analysis values were applied to the hyperspectral imagery (APEX). The classification results were compared to the supervised classification SVM (Support Vector Machine). The DCA method was able to explain 16,3 % variation for the first three axes of the ordination analysis. Subsequent correlation with spectral data of vegetation showed that the highest confidence value reached the first axis correlated with field spectral data (R^2 = 0,56). The resulting classification map created using RGB composition showed detailed information on the composition of the vegetation.

Keywords: The Krkonoše Mountains National Park, classification, APEX, DCA, PLSR, hyperspectral data