

# **The influence of spectral resolution on land cover classification in Krkonoše Mts. tundra**

## **Abstract**

The aim of this diploma thesis was to specify the spectral resolution requirements for classification and to identify the most important spectral bands to discriminate classes of the predefined legend. Aerial hyperspectral data acquired by AisaDUAL sensor were used. The method applied for the selection of the important bands was discriminant analysis performed in IBM SPSS Statistics. The most discriminative bands were found in intervals 1500–1750 nm (beginning of SWIR), 1100–1300 nm (longer wavelengths of NIR), 670–760 (red-edge) and 500–600 nm (green light). The classification of the selected bands was realized in ENVI 5.4 using the Support Vector Machine classifier, achieving overall accuracy of 80,54 %, Kappa coefficient 0,7755. The suitability of available satellite data for the classification of tundra vegetation in Krkonoše mountains based on spectral resolution was evaluated as well.

**Keywords:** tundra, Krkonoše, classification, spectral resolution, class separability, discriminant analysis, hyperspectral data