Abstract

The work is aimed at finding appropriate methods for observing changes in the status of forest vegetation and its evaluation in the years 1992-2015. The satellite images of the Low Tatras are analyzed by using Time Series technology. Specifically, the images Landsat 4, 5, 7 and 8, for which it is necessary to perform a calibration and an adjustment of input data values to realize the individual vegetation indices, due to the fact that the images are captured by different sensors with different radiometric resolution. From this perspective, the work deals with the possibilities of normalized relative radiometric corrections and search for a particular type of appropriate compensation for Landsat CDR images. Calibrated data sets are evaluated by Time Series of different vegetation indices. The resulting values are evaluated in relation with the occurrence of forest disturbances, eg. wind storms, biological and other pests. The final part is discussion of the results, evaluating the test methods of calibration and suitability of vegetation indices for observing the state of calamity. The App is created for generating the Time Series of Landsat images CDR and for preparing RRN datasets.

Key words: Time Series, radiometric correction, atmospheric correction, Landsat CDR, vegetation indices, cross-calibration, GUI applications, disturbance.