Abstract

The main goal of this diploma thesis was to find and quantify the connection between coherence, entropy, polarimetric angle alpha obtained from Sentinel-1 radar data and grass cutting/pastures. The research was carried out in the area of the Krkonoše national park. To assemble and validate applied methodology, field data was collected 5 times. Hourly rainfall data from Czech hydrometeorological institute was available, but it did not have to be used – no rainfalls were recorded at the time of data acquisitions. Dependence between mowing and the value of coherence has been confirmed. After mowing, median coherence was higher than before mowing. The results were similar to VH as well as VV polarization. Coherence on polygons remained higher after 12-24 days. In total, two different data acquisition geometries (ascending and descending) were examined. The results in both cases were similar. For polarimetric parameters, no correlation between polarimetric parameters and grass mowing or pasture has been confirmed.

Keywords: radar, SAR, Sentinel-1, coherence, polarimetry, grass mowing