

Abstract:

The diploma thesis deals with the dependence of short-term intensive precipitations on the altitude of the Czech Republic. Data from the warm period of the year were used, it means from 1st April to 30th September, because there are the most frequent occurrence of the convective phenomena, which are the cause of the intensive precipitations. It was used data of 3 years: 2002, 2004 and 2005. These data represent the results of radar's measurement from weather radar Network CZRAD (radars Skalky, Brdy), for the year 2005 it was used also data corrected according to the rain gauges network (adjustment). The emphasis is placed on the study of 1-hour precipitation amounts, their comparison with results of 3-hours, 6-hours, 12-hours and 24-hours precipitation amounts and the interpretation in graphs, tables and cartograms. The analyses of 1-hour precipitation amounts showed very slow trend from the lowlands till the altitudes of 600 – 800 m a. s. l. The precipitation amounts descended towards the mountains. During longer precipitations the maximum values were situated mostly in the altitude 500 m a. s. l., whereas the precipitation amounts rose to this altitude, upward descended. Maxima are mostly situated in piedmont windward slopes. It was also used daily rainfall totals from the same years, which affirmed above-mentioned results. The part of the work is focused on the comparison of the results of radar measurements with data of the rain gauges network and with combined information (adjusted rainfalls). The work showed that radar measurements agreed with the adjusted rainfalls in the precipitations shorter than 24 hours, especially during the rainfalls till 20 mm. The difference between radar and adjusted rainfalls increased with rising intensity and the duration of the precipitations. During extremely heavy precipitation these differences within the frame of 1-hour precipitation amounts were 40 %. During 24-hours precipitation amounts it was approved the difference over 50 %. In the comparison rain gauges data and data from radars (daily rainfall totals) the difference was even 82 % at present radar's underestimating.