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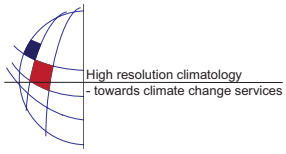

Statistical and frequency analysis of extreme 2-days and 5-days precipitation totals in western Slovakia within the 1951-2009 period

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Daily (one-day) and k-days precipitation totals maxima might gain a rising tendency in the future in consequence of the global warming. It is well known that heavy rains or intensive rains of several days′ durations could cause very significant problems in economical and social spheres of the countries. The important damages could be suffered to the environment. In the contribution there are investigated annual maximum rains lasting one day as well as several days from more than 100 rain gauge stations in the western part of Slovakia in the 1951 - 2009. The purpose of the paper is to analyze not only the absolute precipitation maxima in particular time-series but also thein changes through the year. The statistical processing of one-day rains shows the considerable time variation with the inhibition of rain activity in the period 1975 – 1989. Daily precipitation total maxima are analyzed at selected meteorological stations within particular months of the year. In comparison with short-term rainfall intensity and daily precipitation maximum that usually originate a genesis of local flash-floods, the n-days precipitation totals have a potential to induce the regional floods affecting significantly larger area. K-days precipitation totals analysis from at least 1951 ought to reveal some connections between their spatial and temporal occurrence and high waterflow existence in main water-courses.