



## **Frequency of occurrence and spatial distribution of very high daily precipitation totals in Slovakia**

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Daily precipitation totals  $\geq 50$  mm are recorded in precipitation station network of SHMI only in certain years. Such daily precipitation totals can already cause some damage. From available data series with precipitation totals were processed so that the number of stations that recorded daily precipitation totals  $\geq 50$  mm,  $\geq 70$  mm,  $\geq 100$  mm,  $\geq 150$  mm a  $\geq 200$  mm was assigned for the individual dates.

Dates with selected precipitation totals have been sorted chronologically, also by their occurrence in the individual months of the year and eventually classified by to the overall number of recorded daily precipitation totals  $\geq 50$  mm and higher, from the date with the highest number of such daily precipitation totals to date with the lowest number of such daily precipitation totals recorded in station network of Slovakia. Available data have been processed since 1951 respectively 1965 and for the spatial analysis since 1981. Dates with the occurrence of very high daily precipitation totals represent a good material for selection of extreme meteorological and hydrological situations. In this context it is striking that there is frequent presence of dates with higher number of cases with daily precipitation totals  $\geq 50$  mm, in the 90s of the last century and the present course of the 21st century.

The spatial distribution of very high daily precipitation totals and the frequency of their occurrence indicate that there are some regions where the occurrence of such high daily precipitation totals is clearly higher not only in absolute terms, but also in the annual regime. Important is the finding that in Slovakia such a high daily precipitation totals are not concentrated in all the mountainous areas equally, and in the lowlands of southwestern Slovakia there are isolated regions with even higher number of such precipitation totals than in some mountain areas, or even in eastern Slovakia, where it rains more regularly. It's caused by the summer storm downpours and also by the activity of the Mediterranean low pressure areas. This is confirmed by fact that the highest daily precipitation total so far in Slovakia has been recorded in the east of Podunajská nížina lowland, in the town of Salka, where on the 12-th of July 1987 the precipitation total of 231.9 mm was observed.