Title of Thesis: Precipitation amount differences between fixed and sliding time windows
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Abstract

This thesis introduces the issue of differences between precipitation totals measured within fixed and sliding periods (further as fixed and sliding totals). Because of several reasons, the precipitation is being measured in given intervals, in practice. Values obtained in this manner, however, are mostly lower than if the measuring period of the same length is set to include as much precipitation as possible. This is because the sliding total is split in two fixed totals. Therefore, values of certain precipitation characteristics, essential for the evaluation of potential hazards and their impact on the society, are often underestimated.

So, the thesis presents a research of the precipitation measurement methods, as well as the previous explorations of the given matter and the influences determining the average magnitude of the fixed vs. sliding totals difference. This difference is expressed via the so called Hershfield factor, a coefficient used for conversion of sets of fixed totals to sliding totals. Its general value is most commonly determined as 1.13. It, however, varies according to the precipitation length, climate and several other factors.

Finally, the thesis presents an own study based on an analysis of precipitation data from the climatological station Semčice in Mladá Boleslav district from years 2005 − 2014. The results essentially correspond with the general value of 1.13 mentioned above, without any significant variations depending on the length of the totals, the data processing method or other factors. Moreover, the part of the results showing different values was not found representative because of too little input data. However, more extensive studies in the future will most likely reveal the variability of the Hershfield factor values in the Czech Republic.

Key words: precipitation measurement, Hershfield factor, fixed precipitation total, sliding precipitation total