

Abstract

The thesis approaches the problem of systematic errors that arise in measuring precipitation. These errors lead to underestimation of total rainfall. Size of losses can reach in our latitudes even tens of percent. The systematic errors that contribute most to the underestimation include losses caused by the rain gauge walls wetting, evaporation losses and losses due to aerodynamic effects on the rain gauge precipitation particles. A major section of the thesis is formed by background research, which deals with the issue of systematic measurement errors precipitation. The background research tackles the lack of literature on this topic in the Czech Republic. In the research section of the thesis, two existing correction methods for estimating the size of systematic errors for the Czechoslovak manual rain gauge Metra (method developed in the 80's by Slovak Hydrometeorological Institute and the method described by the dissertation thesis Radoslav Tihlárík) were applied to data of selected four stations in the Czech Republic (Milešovka, Bedřichov - Přehrada, Čáslav - Nové Město and Svratouch) . The first mentioned method was applied to all stations in the Slovak Republic in the nineties. Nevertheless, it has not been used in the Czech Republic so far. The results show that the Tihlárík method gives substantially larger corrections than the correction method constructed by the Slovak Hydrometeorological Institute. Size of losses varies according to seasons and altitude at selected stations from 5 to 50 %. The results also highlight the fact that in higher altitudes in the Czech Republic, dual annual course of precipitation with a strong incidental peak occurs in winter months. A part of the thesis is the attached electronic file that is documenting the precipitation correcting.