



On a new method of tipping buck gauge calibration at HMS

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The knowledge of precipitation distribution is of great importance for meteorological applications (numerical weather prediction, agrometeorology, climatology). The variation and distribution of precipitation are on a wide scale that requires high density of measurements.

HMS has a precipitation ground measurement system of 100 tipping buck gauges. All tipping buck gauges are of the same manufacturer (Lambrecht) and are maintained and calibrated regularly.

Firstly the calibration method of tipping buck gauges applied at HMS and the relevant statistics are introduced such as distribution and sources of measurement errors.

New requirements arose against the existing calibration method after it was studied. As the precipitation measurement is based on weight measurement during the calibration it is important to provide tipping the specified weight precisely to the gauges. The best way is the controlled closure of the reference interrupting the tipping procedure.

This leads to the purchase of new, precise, more accurate scales as well as to some other developments. The explicitly controlled changeability of tipping intensity – that affects the precision of measurements – also came to a solution with multiple closures introduced. Other changes were also made on the calibration procedure to facilitate the work.

Secondly the newly introduced changes and developments by the authors and their effects on calibration are briefly described.