



Experience with Dynamic Calibrations of Tipping-Bucket Raingauges

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Two heated tipping-bucket raingauges with different collector areas have been used at TESTCOM for the measurement of rainfall intensities since December 2002. One of them has a collector area of 500 cm², and the rain amount per tip is 0.1 mm. The other one has a collector area of 200 cm², and the rain amount per tip is 0.2 mm. The time of tips has been recorded with uncertainty of 0.1 second. These two raingauges are located very close to each other to avoid the influence of space inhomogeneity of rainfall events. The obtained rainfall intensity data are stored by PC and recorded on CD-ROM.

It is generally known higher rainfall intensities measured by tipping-bucket raingauges are underestimated. Therefore, after static calibration both tipping-bucket raingauges were dynamically calibrated by water flowmeters. The used method of dynamic calibration of raingauges and our experience obtained are described. Data obtained from these dynamically calibrated raingauges were statistically processed over the one year period from June 2006 to May 2007. The method of rainfall intensity data processing is described. The cumulative distributions of average 1-minute rainfall intensities obtained from individual tipping-bucket raingauges, with and without dynamic calibration involved, are presented. The results obtained are compared and discussed.

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