



Correction techniques for weighing rain gauges and their influence on the accuracy of rain intensity measurements

C. Alexandropoulos, M. Lacombe

METEO-FRANCE, 7 rue Teisserenc de Bort, 78195 Trappes cedex (France)

Various methods and instruments to measure rain fall amount and rain intensity exist: weighing rain gauge is one of them. Collected rain is instantaneously weighed. The weighing system used can be e.g. strain gage, frequency measurement of a string suspension, pressure sensor. This measurement system minimizes wetting loss and has a better resolution than most of the conventional mechanical systems, from 0.001 to 0.1mm. A specific software, varying for each manufacturer, inputs weight measurement. The weight variation created by first precipitation particles collected allows to compute the precipitation event beginning. But the noise during weight variation as wind pumping, drift temperature, evaporation, fall speed of rain, must be treated and minimized. This software takes into account these influence quantities but needs time to detect precipitations and to apply computed corrections. Depending on different devices, 30 seconds to several minutes can be necessary to detect the precipitation start. So, intensity and rain accumulation measurement are not provided during this time.

This presentation aims at showing different performances of weighing rain gauges selected for the WMO Laboratory Intercomparison of Rainfall Intensity Gauges, tested with bench calibration laboratory at Trappes (FRANCE).