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## Analysis of highly accurate rain intensity measurements from a field test site

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**Abstract.** In the course of the recent WMO international instrument intercomparison in the field and the associated specific laboratory tests, highly accurate rainfall intensity measurements have been collected and made available for scientific investigation. The resulting high quality data set (contemporary one-minute rainfall intensity data from 26 gauges based on various measuring principles) constitutes an important resource to provide insights into the expected behaviour of rain intensity gauges in operational conditions and further useful information for National Meteorological Services and other users. A few aspects of the analysis of one-minute resolution rain intensity measurements are discussed in this paper, focusing on the observed deviations from a calculated reference intensity based on four pit gauges. Results from both catching and non-catching type gauges are discussed in relation with suitable tolerance limits obtained as a combination of the estimated uncertainty of the reference intensity and the WMO accuracy limits for rainfall intensity measurements. It is shown that suitably post-processed weighing gauges and tipping-bucket rain gauges had acceptable performance, while none of the non-catching rain gauges agreed well with the reference.

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