

Interactive comment on “High resolution rainfall – runoff measurement setup for green roof experiments in a tropical environment” by T. Vergroesen et al.

Anonymous Referee #1

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GENERAL COMMENTS

The paper describes the experimental setup for rainfall-runoff measurements in vegetated roofs in Singapore, which is in a tropical climate and thus experiences very intense rainfall events. Estimates of evapotranspiration are also presented using a water balance approach.

After reading the manuscript, it is not clear what the novelty of the work is. The loss of accuracy of tipping buckets for intense rainfall events is well established, the discussion on the calculation of runoff, although very detailed, is simply based on weighting water

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volumes as well as the estimation of evapotranspiration. The section on environmental disturbances on the measurements (section 4) is very general, and the discussion (section 5) looks more like a review of some other experimental setups with aims similar to those of the authors.

When reading it, the manuscript appeared to me like a chapter of a report or a thesis dedicated to the description of the methods used for a research project, but the results from the research (data analysis and discussion of the data) are missing.

As such, I don't believe that the paper is suitable for publication in HESS.

SPECIFIC COMMENTS and TECHNICAL CORRECTIONS

- The paper appears quite long and some concepts are repeated more than once. For example, the calibration of the tipping bucket appears in section 2.1 and 3.1. In section 2.3, the size of the box is repeated twice, once at line 14 and again at line 27. At page 9374, line 25 repeats line 6.

- Some statements, even though true, are redundant. For example, at the end of page 9371 and the beginning of page 9372, the authors say that they transform runoff volumes in equivalent mm to compare to rainfall. This is rather common in hydrology and I would remove it.

- Page 9371, line 27: 2.51 mm/m² should be simply 2.51 mm.

- Page 9376, line 3: ...weights have been transformed...

- References: many of the references are from conferences and difficult to find.

- Figures: many figures are not useful and informative. I would remove the figures with pictures of equipment that can be easily found in user manuals from companies (rain gauges, scales, etc.).