SOIL Discuss., 2, C293–C294, 2015
www.soil-discuss.net/2/C293/2015/

SOIL Discussions Open Access

Interactive comment on "Determination of hydrological roughness by means of close range remote sensing" *by* A. Kaiser et al.

Anonymous Referee #2

Received and published: 13 July 2015

It is a very interesting paper and quite well written. I have just some points where I miss some information. 1) At the end of the introduction, the aim of the study is described to fuzzy. Please formulate clear scientific questions. 2) Research areas: Here, I have two points: 1) Please give in chapter 2.1.1 more detailed information about soil and climate (in 2.1.2, the information are given). Also in 2.1.3, information on rainfall and temperature are missing (not only "tropical climate", please give rainfall values and some temperature data). If you follow my second point, this first point can be ignored. 2) I do not understand the choice of the test fields. Bavaria and Saxony is clear because of the locations of the involved institutes. But why a test area in Brazil? For the presented study, the geographical environment is absolutely irrelevant. Climate, soil, geology, geomorphology, all of these factors do not influence the results.

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In the “worst” case, the study could have been performed with artificial aggregates under laboratory conditions. So, the choice of the test fields seems to be a waste of money and time (I know, this statement is a bit provocative). I think, the section “Research areas” can be clearly reduced and the test plots itself should be presented more detailed. 3) Discharge experiment: The justification why the flow depth can be used should be presented a bit earlier. The section below equation 3 (less the last sentence) should be placed directly behind “. . .by the flow depth” and before “As a function. . .”. 4) How has the flow depth been measured? Such very low water depths are not easy to measure. And which water depth has been measured? On a rough surface, the water depths should show a large variability. Please give more details on the used methods. 5) Flow velocity measurement: Which flow velocity has been measured? Using a color tracer, you observe the maximum flow velocity. Did you use this maximum flow velocity or did you use a correction factor to calculate a mean flow velocity? You state that due to the concentration of the flow, a large variability has been observed. How did you mention this problem? Please give more information about flow velocity measurement. Summarized, I suggest a “minor revision” for this paper.

Interactive comment on SOIL Discuss., 2, 401, 2015.

SOIL

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Interactive Comment