The authors want to thank the anonymous author for his/her comments on the manuscript. Especially the criticism concerning the choice of research areas was important. Furthermore, the questions about the flow measurements improved the quality of the article in a way this important part of our study was clarified. In the following we describe corrections to the manuscript and give comments to the reviewer's remarks:

R = Reviewers comment

A=Authors response

Anonymous Referee #2:

R: At the end of the introduction, the aim of the study is described to fuzzy. Please formulate clear scientific questions.

A: added the following to the manuscript: *Therefore, the overall aim of this study is to test the relationship between a very high resolution topography model and the measured hydraulic roughness values. Common roughness coefficients were tested for their applicability with Garbrecht's* D_{90} *showing best correlations.*

R: 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.

A: We added annual rainfall and mean temperature.

R: 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. 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.

A: This statement is not provocative. It is important to be explained in the manuscript. The choice of research areas was not triggered by the presented research in the first place but already running projects in these regions with wider research questions. Consequently, the data production for the presented study occurred as a "by-product". Added to the manuscript: *It is important to note that the main motivation for the selection of the research areas was not the presented study itself, as it was not dependent site-specific differences like climate or geology. Used data resulted from adaptations of a larger measuring setup for rainfall simulations and were thus generated as a "by-product".*

R: 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…”

A: We agree with the referees comment and changed the paragraph accordingly.

R: 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.

A: Flow depth was derived from a continuity equation. For other measurements, complex approaches are required and are a topic of the discussion. Of course, flow depth vary on the plot. Therefore, we applied mean values of each transect as an approximation.

R: 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.

A: We measured the maximum flow velocity but since we measured at varying points we obtained the average for the whole plot. This means that we not only measured the first moment the tracer reached the end of the plot but a total of 8 lines across the plot were the tracer showed different velocities throughout the running experiment. We furthermore added information on the sensitivity of the input parameters of the Manning-equation and especially the flow velocity shows rather low sensitivity for higher (faster) values (see Fig. 8)