Hydrol. Earth Syst. Sci. Discuss., 5, S2183–S2185, 2008
www.hydrol-earth-syst-sci-discuss.net/5/S2183/2008/

Hydrology and Earth System Sciences Discussions

Interactive comment on "Spatial rainfall variability and runoff response during an extreme event in a semi-arid catchment in the South Pare Mountains, Tanzania." *by* M. L. Mul et al.

M. L. Mul et al.

Received and published: 15 December 2008

We highly appreciate the comments from the reviewer, which will improve the quality of the manuscript. Your comments on improving the original contribution of the paper and critically look at the uncertainties of the applied methods are appreciated and we will work on improving these sections.

Hereby give our response to the issues raised by the reviewer: i) we will rewrite the section mentioning the original contribution of the paper. ii) we will add a section on the assumptions of the data analyses. iii) we will add a section on the implications of these assumptions for the results. iv) we will add a section on the uncertainties of the

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper

study.

specific comments: 1) We will rewrite the introduction to emphasize more on the original contribution of this research.

2) We will review and improve the section on the return period of the rainfall. The suggestion to also look into the return period of the flood peak using the world catalogue of maximum observed floods will be investigated and mentioned.

3) We consider the 1 March flood a flash flood as the concentration times are extremely short ($<$ 2 hrs), moreover although at the weir site a base flow is recorded in the valley downstream the river bed is dry most of the time and only flashfloods reach the downstream reach of the catchment.

4) We will rephrase sentence 2662-6.

5) We will add the assumptions of the gradually varied flow equations.

6) We will improve the explanations of the assumptions and uncertainties of the gradually varied flow equations.

7) The recession limb has reconstructed by manual observations. The automatic station was destroyed but the manual measurements continued, although the V-notch was dented by the debri (at the time there were no leakages observed) the V-notch rating curve could still be applied (although this also gives additional inaccuracies). We will rephrase this section to make this more clear. 8) Because during this event the peak flow lasted for a very short time, the inaccuracy of the peak flow, within a margin, does not contribute much to the uncertainty of the runoff volume. The recession curve accuracy as stated in number 7) has some uncertainty, but not as much as the reviewer implies (we will improve the wording of this section to explain this).

9) We will add additional explanation about this statement.

10) We will add a section on discussing the assumptions and uncertainties of the meth-

HESSD

5, S2183–S2185, 2008

ods used.

11) We will evaluate this statement and improve it.

12) We will improve Figure 1.

13) Indeed n=0.05 was used also for the gradually varied flow equation, we will add this in the section.

14) Reference to fig 5 will be rectified.

15) We will improve the caption of Figure 5.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 5, 2657, 2008.