

Interactive comment on “Sub-daily variability of suspended sediment fluxes in small mountainous catchments – implications for community-based river monitoring” by C. Duvert et al.

Anonymous Referee #1

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1. Does the paper address relevant scientific questions within the scope of HESS?

The topic of the paper falls within the scope of HESS, specifically as indicated in point 1: The role of physical, chemical and biological processes in the cycling of continental water in all its phases, including dissolved and particulate matter, at all scales, from the micro-scale processes of soil water to the global-scale processes underpinning hydro-climatology.

2. Does the paper present novel concepts, ideas, tools, or data?

Yes. The novel aspect of this paper is that it compares sediment yield estimates derived
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from high resolution time series to estimates derived from the re-sampled time series at different re-sampling frequencies. The authors evaluate the accuracy of the sediment yield estimates at different basin scales and also evaluate the effect of sampling time.

3. Are substantial conclusions reached?

Yes. This paper provides clear conclusions on (1) the sampling interval required to produce accurate estimates of sediment yield in basins of different size, and (2) the effect of time of sampling during the day.

4. Are the scientific methods and assumptions valid and clearly outlined?

Yes. The scientific methods and assumptions are valid and clearly outlined

5. Are the results sufficient to support the interpretations and conclusions?

Yes. The study is based on high resolution data on discharge and sediment concentration, derived from water level, calibrated turbidity, and samples collected with an ISCO sampler, at four sites within the research basin throughout 2008 and 2009. Thus, there is a substantial body of data on which the interpretations and conclusions are based.

6. Is the description of experiments and calculations sufficiently complete and precise to allow their reproduction by fellow scientists (traceability of results)?

The data collection procedures and calculations are clearly described in the paper.

7. Do the authors give proper credit to related work and clearly indicate their own new/original contribution?

The link between earlier work and this study is clearly described.

8. Does the title clearly reflect the contents of the paper?

Yes. The title describes the contents of the paper well, and provides a good indication of the practical significance of the findings.

9. Does the abstract provide a concise and complete summary?

Yes.

10. Is the overall presentation well structured and clear?

Yes. This paper is well organized.

11. Is the language fluent and precise?

Overall, this paper is well written. I do have, however, some suggestions for minor changes:

Page 8235 line 7 and elsewhere – The term “hydrosedimentary” is rarely used in the English literature, and its rare use seems to be limited to French-speaking authors. In most if not all cases, “hydrosedimentary” could be replaced by “sediment transport.” Thus, hydrosedimentary monitoring would become sediment transport monitoring, hydrosedimentary regime would become sediment transport regime, and so on.

Page 8237 line 21 – “little debated” should be “rarely debated.”

Page 8240 line 15 and elsewhere – “SSC” should be “suspended sediment concentration.” Avoid unnecessary abbreviations. Only use abbreviations for variables in equations.

Page 8242 line 24 – “630-km²” probably should be “630 km²”

Page 8244 line 11 and elsewhere – “SS flux” should be “suspended sediment flux.” Avoid unnecessary abbreviations.

Page 8248 line 15 and elsewhere – “SSY” should be “suspended sediment yield.”

Page 8250 line 19 and elsewhere – “SSF” should be “suspended sediment flux.”

Page 8251 line 2 – “in the perspective” should be “from the perspective.”

Page 8251 line 6 – “can not be reasonably met” should be “cannot reasonably be met.”

Page 8251 line 9 – The authors state that “our results provide useful insights...” It would

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be more useful to actually state what those insights are.

Fig. 7 caption – “The white area materializes conditions...” should be “The white area indicates conditions...”

12. Are mathematical formulae, symbols, abbreviations, and units correctly defined and used?

Yes.

13. Should any parts of the paper (text, formulae, figures, tables) be clarified, reduced, combined, or eliminated?

No.

14. Are the number and quality of references appropriate?

Yes. The number and quality of the references is fine. The authors have included some of the key references (e.g. Horowitz, 2003; Horowitz, 2008; Phillips et al., 1999).

15. Is the amount and quality of supplementary material appropriate?

The manuscript includes an appropriate number of tables (1) and figures (7).

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