

Interactive comment on “Hydrodynamic simulation of the effects of in-channel large woody debris on the flood hydrographs of a low mountain range creek, Ore Mountains, Germany” by Daniel Rasche et al.

Anonymous Referee #1

Received and published: 8 March 2019

1) General comments and my recommendation:

The authors have performed satisfactory analyses and generated positive results; The paper is well written and the subject matter is adequate to the scope of the journal, although I recommend this paper for publication after some structural revisions.

2) Minor corrections and observations:

a) Introduction:

Page 3, section 1, from line 30: I suggest to include also “Montgomery, D.R., Collins, C1

B.D., Buffington, J.M., Abbe, T.B., 2003. Geomorphic effects of wood in rivers. In: Gregory, S.V., Boyer, K.L., Gurnell, A.M. (Eds.), *The Ecology and Management of Wood in World Rivers* Bethesda (MD) American Fisheries Society, pp. 21–47.”.

Page 4, section 1: I should advice the authors to demonstrate and stress why this paper is very important.

b) Study area:

I suggest to the authors to change the title of the chapter with “geological setting” including only the information about the catchment. The information about the study reach should be move into a new sub-chapter (e.g. study site) in “material and methods” chapter.

Page 4, section 2, between lines 15-25: If possible, the authors should provide the grain size distribution of the study reach.

Page 4, section 2, line 13: Please, you should add the longitude and latitude of the catchment.

c) Methods:

I suggest to change the title of the chapter with “material and methods”.

Page 5, section 3.1, between lines 15-20: Please, remove the word “accurately” or give any quantity information about the accuracy.

Page 5, section 3.1, line 5: “. . .management application”. Please, you should add a reference about it.

Page 5, section 3.1, line 17: Please, remove or give more information about the term “accurately”.

Page 6, Section 3.2, between lines 30-5: Please, could you provide some information about the orientation of the LW placed in-channel? Were they placed cross-stream or

stream-wise?

Page 6, section 3.2, between lines 15-20: Please, provide the type of interpolation you used.

Page 8, section 3.4, lines 5 and 6: Please, change the unit of measure from cm to m. The authors should standardize the entire manuscript.

d) Results:

Page 8, section 4.1, line 20: "very well" is not a scientific statement.

Page 10, section 4.4, line 5: "very good" is not a scientific statement.

e) Discussions:

Page 10, section 5.1, lines 11 and 12: "very well" and "well" are not scientific statements.

Page 11, section 5.2, line 14: "well" is not a scientific statement.

Page 11, section 5.2, between lines 20-25: Please provide a reference in the literature about the sentence.

Page 12, section 5.3, line 23: "very good" is not a scientific statement.

Page 12, section 5.3, between lines 20-25: "...This is in accordance with previous studies...". Please, provide a reference about it.

f) Conclusions:

Page 13, section 6, between lines 18-20: "The effect of stable in-channel..." please, provide a reference about it.

In this chapter the authors are not properly writing the conclusions of the study conducted. Several parts should be moved to a new subchapter in the discussions part. For example, on page 13, section 6, between lines 10 and 15, the authors talk about a

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limitation of the study. The same between lines 15 and 20. I think that you could talk about it in a new subchapter (e.g. limitations and future challenges), highlighting also the future development of the technique. Overall, in the conclusion the authors should present a concise and clear message, avoiding generalizations of the implications.

3) Suggestions:

a) As the author can read in the preface of the book of the First International conference of Wood in World Rivers (Gregory, S. V., K. L. Boyer, and A. M. Gurnell, editors. 2003. The ecology and management of wood in world rivers. American Fisheries Society, Symposium 37, Bethesda, Maryland), the term "debris" was first used to refer to the wood slash and debris left on the land and in the stream after timber harvest. For this reason, the term negatively connotes garbage or trash to the general public. The debate was reported also during the Third International conference of Wood in World Rivers in Padua (Italy) where the audience positive accepted to discourage further the use of the term "debris", encouraging the use of the word "wood". Thus, I would like to suggest to the authors to remove the term "debris" along the entire manuscript.

4) Figures:

Figure 1. I suggest to change the DTM of the study reach with another one that can give more information about the nature of the reach. An aerial photo could be enough.

Figure 4: I suggest to remove the titles and add the letters A, B, C, and D. Please, you should modify the text accordingly.

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