

Interactive comment on “Modern comprehensive approach to monitor the morphodynamic evolution of restored river corridors” by N. Pasquale et al.

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General comments: We thank this Reviewer for his observations and comments, which have as much as possible been taken into account in revising the manuscript. Major changes are hereafter discussed.

1) This Reviewer is correct when he criticizes the lack of results in this work. Indeed, as he correctly noticed, the aim of this work is to present and discuss the framework of general activities and experimental installation that we setup in order to comprehensively monitor the morphodynamic evolution of the river reach AFTER restoration

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ended in 2004. Given the amount of experimental devices, foreseen experiments, involved modeling and data analysis, we thought to organize this discussion article to which future articles with actual results will refer to as far as the description of the material and methods is concerned. We reorganized the article by better explain its real scopes and now abstract and introduction contain sentences specifying clearly our intent. Specifically:

a. Abstract: "The purpose of this paper is to enrich efforts in this direction by presenting the framework of experimental activities and the related experimental setup that we designed and installed in order to accomplish some of the research tasks of the multidisciplinary scientific project RECORD (Restored Corridor Dynamics)".

b. Introduction, P.4, R.3: "In this descriptive paper we present the comprehensive framework of experimental activities that we adopted to monitor the evolution of the restored river corridor, of the Thur River".

c. Introduction, P.4, R.13: "In order to show the research potential behind the collected data we also provide an essay of preliminary results".

d. Conclusion, P.22, R.1: "In this work, we described the framework of experimental activities and data analysis, the related instrumentation setup that we installed to quantify the evolution of a restored river reach. With specific reference to the Thur River, we provided examples of data analysis that we intend to perform to assess future morphodynamic scenarios after restoration".

e. Conclusion, P.22, R.8: "A mechanistic understanding of such dynamic processes is necessary and useful for further studies and application to different bioclimatic regions".

2) Concerning the comment about the length of the paper and the "premature" introduction of the phase space concept, we agree to remove this part. This helps shortening the paper as this Reviewer has requested.

Specific comments:

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- Figure 1c: the picture was taken at the beginning of the 20th century. However, specific information about the date seems unavailable (Rodhe 2004, PhD thesis, ETH Zurich, citation added).

- Figure 8: This reviewer's observation is correct. We decided to process the data by separating the potential growth from the actual growth. Hence, the new Figure 8 shows now two curves for each of the four plots. Potential growth does not take cuttings (and relative shootings) removed by the flow or not spread into account when computing the plot average. Actual growth represents the average growth of the whole plot during the season, including damaged, removed or cuttings that died. This allows considering that the whole biomass has partially suffered, despite singular cuttings forming the plot may keep growing healthy. The result of this differentiation is that effective growth better conveys the message about the destructive effect of floods.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 7, 8873, 2010.

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