

Interactive comment on “Virtual laboratories: new opportunities for collaborative water science” by S. Ceola et al.

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Response to Anonymous Referee #2

The authors gratefully acknowledge the Referee for his/her fully supportive review. In what follows in *italics* are the comments provided by the Referee, and in **bold** fonts the authors' response, inclusive of the indication on how the text will be modified within the next days to comply with the Referee' recommendations and comments.

The paper presents the main results of an innovative collaborative work on virtual laboratories for hydrological science within the framework of the EU funded project C6578

SWITCH-ON. The topic is of interest for HESS readers and the paper is very well written, presented and structured. After reviewing the paper, I strongly support its final publication in HESS.

We wish to thank the Referee for his/her important appreciation.

I only would like to suggest two ideas which in my opinion could improve the paper.
1. The title of the paper states “new opportunities for collaborative water science”. Nevertheless, the focus of the paper (or at least, the case study presented) is on hydrology as the two main questions to be addressed (page 13448 lines 21-23) point out. Have the authors considered a more concise title, writing “hydrological science” instead of “water science”? In my opinion, even if the general framework could be useful for other water science experiments, the focus of the paper is on hydrology.

As the Referee properly noticed, the experiment we present in this paper is exclusively focused on hydrology. However, we believe to keep the title in its original form since our aim was to present a first example of comparative research in the water science context. Further experiments, some of them already started, are planned to include ecohydrological and social features not originally embedded in a hydrological context. In addition, we prefer not to change the title length, since we found it as the most synthetic version.

2. 15 catchments have been considered to develop the experiment. According to data provided in Table 1, mean catchment annual rainfall correspond to wet or very wet conditions and mean catchment temperatures to cold or very cold climates. Do the authors think that this homogeneity could influence the results? Would a much varied range of catchment conditions imply a lower reproducibility?

Thank you for this comment, which allows us to better explain our choice. The main goal of our experiment was to verify experiment reproducibility, as outlined in the Introduction. Indeed, “The paper aims to address the following questions: 1. What factors control reproducibility in computational scientific experiments in hydrology? 2. What is the way forward to ensure reproducibility in hydrology?”. Therefore, in order to limit the degrees of freedom of our analysis, we decided to select catchments having comparable hydro-climatic features, similar drainage areas and a minimum of 10 years as observation period.

Typographic errors

1. Page 13454, line 7. Is superscript “-1” correct after “years”? 2. Page 13454, line 26. Is superscript “-1” correct after “years”?

No, the superscript “-1” should be removed from text. Thanks!

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 11, 13443, 2014.

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