

## ***Interactive comment on “Beyond Perrault’s experiments: Repeatability, didactics and complexity” by Stefano Barontini and Matteo Settura***

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General comment The manuscript ‘Beyond Perrault’s experiments: Repeatability, didactics and complexity’ by Stefano Barontini and Matteo Settura is submitted for the special issue of HESS on ‘History of Hydrology’. It is an interesting and appropriate submission for this journal and special issue. In the manuscript the authors try to raise attention to aspects of experiments performed by Perrault, which are not well known so far, hence the ‘Beyond’ in the title. These aspects: repeatability of experiments, didactical value of the experiments and complexity are of general interest for the history of science and in particular for the development of hydrology as a field of science. So, the

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idea of the paper is good. However, the paper suffers from a number of less than optimal presentation aspects due to which its current accessibility (readability) and impact suffers. The main problems can be summarized as: 1: The language and structure of the text is not good. It would strongly benefit from a detailed English editing and some rewriting of sections to make certain aspects clearer. 2: Although the paper does not focus on the main scientific achievements of Perrault, the authors cannot assume that the reader is fully aware of these. They may have been highlighted in the paper of Nace (1974), however that paper might not be directly available (I had to order it). Currently, this manuscript provides in a sketchy way the main achievements of Perrault to the reader. I suggest that upfront in the introduction a better summary of Perrault’s hydrological science achievements are presented. Next the paper can continue in more detail on the less well known aspects of some of these achievements. Specific comments: Does the paper address relevant scientific questions within the scope of HESS? YES Does the paper present novel concepts, ideas, tools, or data? YES Are substantial conclusions reached? YES Are the scientific methods and assumptions valid and clearly outlined? YES Are the results sufficient to support the interpretations and conclusions? YES Is the description of experiments and calculations sufficiently complete and precise to allow their reproduction by fellow scientists (traceability of results)? YES Do the authors give proper credit to related work and clearly indicate their own new/original contribution? I suggest that the authors add the reference to English translation of Perrault’s work. This makes it possible for interested readers to trace and read the work itself. La Roque, A. (1967). On the origin of springs, Pierre Perrault (translation). New York and London, Hafner Publishin.g Co. Does the title clearly reflect the contents of the paper? YES Does the abstract provide a concise and complete summary? NO: the abstract does not represent a proper summary of the main text, currently it reads more like an introduction. It needs to be completely rewritten. Is the overall presentation well structured and clear? NO: The introduction should better explain/summarize the main achievements of Perrault as known and described by e.g. Nace (1974). Then is should explain what the issue is that is not known well about Per-

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rault and how this paper will enlighten us in showing these aspects of Perrault's work. Is the language fluent and precise? NO: The English grammar and spelling needs to be improved. Now there are sentences, which are difficult to understand or where the formulation is imprecise. E.g. the very first words of the abstract state: 'The studies conducted. . .', which studies do the author refer to? The style of writing is also with a lot of long sentences and paragraphs, which makes it more difficult to follow. An example is p6, line 23-27. Line 4 page 2, '...in order to become a modern science, Hydrology needed two steps. . .'; I do not like this style of de-personified subjects. Sciences, including hydrology is advanced by people, crediting then the science itself with steps 'needed' is, especially in a historical oriented paper, to be avoided. Line 21 page 6, experiences? Or experiments?

Are mathematical formulae, symbols, abbreviations, and units correctly defined and used? NO: not all symbols of the equations are explained. Should any parts of the paper (text, formulae, figures, tables) be clarified, reduced, combined, or eliminated? YES: Abstract and introduction should be rewritten. I did not find the explanations on the experiments (section 4 and 5) and the accompanying figures very clear, I suggest some strong editing of these sections as well. Are the number and quality of references appropriate? Add reference to La Roque Is the amount and quality of supplementary material appropriate? FINE

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