

Hydrol. Earth Syst. Sci. Discuss., referee comment RC2
<https://doi.org/10.5194/hess-2021-86-RC2>, 2021
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Comment on hess-2021-86

Anonymous Referee #2

Referee comment on "Compositional balance should be considered in the mapping of soil particle-size fractions using hybrid interpolators" by Mo Zhang and Wenjiao Shi, Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2021-86-RC2>, 2021

General comments:

The topic of the paper is relevant, but the study has limitations and weaknesses that should be tackled.

Specific comments:

- 1) The literature review in the Introduction is wide, but not well organized and structured. I suggest reorganizing and rephrasing it to improve readability.
- 2) In the Introduction it is mentioned that "It has been proven in statistical science that different results are obtained using different choices of ILR balances", but no references are provided to support this claim. Please, add references of works where the influence of the choice of ILR balances on the results is demonstrated.
- 3) In equations (7) and (8), are M_i and P_i $(D-1)$ - vectors? If so, the expressions (7) and (8) should account for that. Otherwise, their meaning should be better explained.
- 4) Are the differences found in the indicators significant? The comparisons reported (for example in Sections 3.2, 4.1 and 4.2) should be based on statistical tests to verify the statistical significance of the differences observed in the indicators. The significance of the differences should also be taken into consideration in the grading of the three SBP at the end of Section 3.2, otherwise the results shown in Figure 5 may be misleading.
- 5) The authors should carefully check the English for grammar errors throughout the manuscript. A serious editing and proof-reading are required.