

## General comments

The manuscript presents some hydrological experiments conducted in the laboratory on six undisturbed monoliths. Three of them have been half-cut and recombined. The results suggest that the effects of the re-combination procedure are negligible.

Overall, I think the study is valuable, the experiments are well conducted and the manuscript is well written and structured.

My only main concern is about the experimental design. While the overall research question is about constructive large monoliths e.g., over 1 m<sup>3</sup> (L39) that should obtain more accurate representation of soil processes, the experiments are conducted to smaller size blocks (1 x 0.5 x 0.35 m). In addition, only two tests are conducted and with same initial and boundary conditions (constant flow of 5 l min<sup>-1</sup> after 24h from fully saturated soil). Finally, as different monoliths are compared, soil heterogeneity affect the interpretation of the results. So, how could we address the questions and reach any conclusions? In contrast, based on the research question and the overall general introduction of the study, I would have expected to see, e.g.: tests conducted on larger combined monoliths (e.g., two blocks of 1 x 0.5 x 0.35 m); tests conducted at the same monolith uncut and cut; tests conducted with different initial and boundary conditions. Field tests over the same area could have also been performed for comparison.

For this reason, I would strongly suggest to increase the number of experiments to try to derive some more general conclusions. In case these could be not anymore feasible, I suggest to rephrase several parts of the manuscript and weakening some statements as listed in the specific comments below.

## Specific comments (L = Line)

L1. Title not really meaningful, please consider rephrase. The two worlds should be field and lab but no experiments are actually conducted to answer that a combined monolith is the best of both. See general comment.

L7 I guess there are several major decision in soil hydrology depending on the objectives and expertise. The statement that a major decision in soil hydrological research is whether to conduct experiments outdoor or indoors is in my opinion a bold statement. Please consider rephrasing.

L16. The study can be improved by adding some suggestions about which experiments should be conducted for a definite conclusions, .e.g, block size, initial and boundary condition, comparison to field tests etc.

L19. Is this really a cardinal question? For some reasons one could always be fine with lab or field test. See also comment for L7.

L68 The blocks were interchanged so that the left front of the left block faced the right front of the right block. Why?

L71. Discussion can be extended considering the results we should expect for different soil type

L92. Why this flow? Is this representative of hydrological conditions? Alternative scenarios should have been performed. If not possible, discussion should be extended with suggestions about.

L205. The fact that spatial heterogeneity affects more than cut monolith can not be considered as a proof of the validity of the combined procedure.

L213-214. Combining more monolith has been not proofed to be valid in the present study

L230. What is Video 1?

L244. During drying the cut seems to become relevant. So, it could be argue that also runoff could be affected depending on boundary conditions.

261. Same comment as for L213-214