

Hydrol. Earth Syst. Sci. Discuss., referee comment RC2
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Comment on hess-2021-36

Anonymous Referee #2

Referee comment on "Technical Note: Low cost stage-camera system for continuous waterlevel monitoring in ephemeral streams" by Simone Noto et al., Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2021-36-RC2>, 2021

The application of a camera approach as a low-cost system for water level observations is certainly interesting. However, my rather fundamental issue with this manuscript is the added value of this approach. These days, one can buy water level sensors for 100-200 USD which provide measurements with a millimetre resolution. As the described system utilizes a pole installed in the stream (which is a neat idea), there is also not the argument that no in-stream installations are needed for the camera approach. So, as cool as the described approach is, I am not sure about its practical value. At the end of the manuscript, the authors mention the importance of having pictures of the streambed. I could agree, but if this is the added value, it should be addressed before and in more detail.

My other major concern is the study design. First of all, I am afraid I have to disagree that manual inspection of the images should be the sole comparison. Here a fully independent approach should be used, i.e. a 'real' water level sensor. Second, the observed level variations (Fig 5) are really small. For evaluation, there should be larger changes, especially also in the 'lab setting' of Test A. Using a constant level here limits the evaluation.

Approach

(fig 2): wouldn't it be advantageous to rotate the image so that the pole is exactly vertical? I am not sure I understood how the tilting of the pole, in reality, is considered. Please clarify.

Fig 4: why is the pole so long? This seems to make things rather unstable

Minor comments:

Sometimes long lists of references are given, e.g. P1L18-19, please try to be more specific about the contributions of the individual papers.

P2L41: here 'only' should be added for clarification

Often hydrologists are interested in flows rather than in levels. Please comment on the use of level data without a rating curve.

I would prefer to have results and discussion in two separate sections for better readability.