

Hydrol. Earth Syst. Sci. Discuss., referee comment RC2  
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## Comment on hess-2021-112

Anonymous Referee #2

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Referee comment on "A comparison of tools and techniques for stabilising unmanned aerial system (UAS) imagery for surface flow observations" by Robert Ljubičić et al., Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2021-112-RC2>, 2021

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This manuscript summarizes an in-depth analysis of the impacts of image stabilization on particle image velocimetry, a tool that is increasingly used in the hydrologic sciences. The authors correctly point out that the effects of stabilization errors have not been examined systematically, so this study fills an important void in the literature. Several open source tools are evaluated in an objective manner and some useful new approaches for characterizing stabilization errors are presented, so I think this study provides a useful contribution. I am generally supportive of the manuscript's eventual publication but would first like to see the authors address a handful of issues. Although the paper is well written overall, I have made a large number of in-line text edits to improve readability and English usage. These changes should not be difficult to incorporate. In addition, I have just a few more substantive comments:

- Line 215: By "structural" are you referring to shape, size, and orientation of features? Please clarify.
- Tables 2-4: It would be helpful to display these vectors on a background image to help orient the reader.
- Equation 3: What about an intercept term of the form  $+ c$  at the end of this equation?
- Figures 11-14: Are the distributions summarized in these boxed plots over the frames in the sequence (i.e., over time)? Please clarify.

With attention to these issues, the paper could proceed toward publication.

Please also note the supplement to this comment:

<https://hess.copernicus.org/preprints/hess-2021-112/hess-2021-112-RC2-supplement.pdf>