

Interactive comment on “Towards harmonization of image velocimetry techniques for river surface velocity observations” by Matthew T. Perks et al.

Anonymous Referee #1

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This contribution is unique and important for the society of research and development on the image-based hydrometry approach. Provided images are useful for the RD mentioned above. Other than images, information for validation is described in the manuscript. The unfortunate thing is that quantitative validation data was not included in the provided data set. This restricts the aim of this contribution, "validation and accuracy assessment" (the last sentence in an abstract.) To accomplish the objective of the study further, I suggest some modifications in both the manuscript and the data-set.

Point to point comments

Lines 11-14, page 2: Two sentences are discussing the image velocimetry application in labs and the logical flow between two sentences is difficult to follow. To make this

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part easier for reading, one option is to move "wide variety of experimental conditions" at the beginning part of the second sentence, since this part is a distinguishing point to the first sentence.

Figure 1. I suggest dropping "Geographical" from the caption or add some more information regarding geography in the figure, e.g. water network, river basin, elevation etc.

Figures 2 and 3. Original and rectified images are provided in each figure and I guess the directions are rotated. Better to indicate the direction of the flow, e.g. by putting the arrow with a label of "flow" onto each panel.

Table A2. Label, this is quite a minor thing but I suggest use "Image Acquisition" instead of "Data Acquisition" in the label.

Table A2. Validation data, I suggest to add the description about validation data (e.g. how and where).

Table A2. Flow information, I suggest adding the mean velocity, representative depth, Froude number, width etc. (maybe, rotate 90 degrees the table to expand the width of the table).

Data-set. Better to include movie file for each site for making easier to know the image characteristics and image recording approaches. (I made by myself for the purpose of review, and I can share it if needed.) Also suggested is providing text file(s) specifying the image resolution, location of the edges of images, and frame rate, and/or provide e.g. jgw, tfw and pgw files for corresponding image/folder (for jpg, tiff and png image, respectively).

Data-set. For sites with velocity distribution measured for validation, provide the location and velocity of the data as e.g. CSV file.

Data-set. Type of image file and the structure of file name differ for each folder, this making the pre-processing a bit troublesome for a potential user of the data. Could you

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provide also a unified formatted image set, e.g. 0000.png? (I made this also by myself for review, and I can share it if needed.)

I understand my suggestions are messy but be making a better contribution of this work to the RD society in this field.

Interactive comment on Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2019-133>, 2019.