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Geoscientific Instrumentation Methods and Data Systems Discussions

Interactive comment on "A novel permanent gauge-cam station for surface flow observations on the Tiber river" *by* F. Tauro et al.

Anonymous Referee #2

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General comments The paper presents a novel fixed gauge-cam station for flow velocity observations. A study case (one minute video) for the Tiber river in Rome is presented, and by applying optics-based algorithms on video data, use and criticalities of LSPIV and PTV techniques are compared.

The topic is of interest for Geoscientific Instrumenation and has practical relevance for the application in hydrology and environmental engineering. The paper clear and well written. I think the reader could be more assisted in some points (especially the figures) and I propose below a short list of integrations or minor changes

1) Please specify in the abstract the orientation of the area investigated (cross sectional vs longitudinal view)

2) Page line 85. Since both systems are provided by the same company, please specify

when you are dealing with the traditional radar+ultrasonic meter system and when you are describing the LSPIV system

3) Page 4, line 110. How are (or could) the two L25 (high angle)/L76 low angle) sensors data integrated?

4) Page 6 lines 193-195. What was the set up and constraints for this calibration procedure?

5) Page 6-7 lines 196-204. Could you further explain with more details the tracking procedure (for instance, the effects of changing the correlation threshold and the radius. Did you perform a sensitivity analysis on it?)

6) Lage 7. Lines 210-214. So are standard deviations referred both to averaging processes over time (different images) and space (spatial heterogeneity)? Is the variability over time negligible compared to the spatial one?

7) Please show in all figures overall flow direction

8) Specifically, it is not clear if (still unrealistic) gradients of measured velocity with PIV are aligned with the flow or not

9) Could you fill table 1 with similar data obtain through the RVM radar?

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