

Interactive comment on “Uncertainty in river discharge observations: a quantitative analysis” by G. Di Baldassarre and A. Montanari

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Review of paper

This paper should be referred back to the authors for substantial reworking and extension. Overall, it is a nice (not new) idea, but it has been done at a superficial level and does not go far enough.

The error analysis is poor and is limited to lumped percentages rather than being quoted over a range of many values. Separation of systematic biases and random errors is not done; the treatment of the sums of the variances is questionable as there is possibly dependence between some of the variables which is glossed over. There is a need for a proper definition of error structures up front so the development can

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be readily followed; for example, the difference between Q and Q' needs to be clearly stated early in the process and errors defined relative to flow or stage. The quoting of ISO 748 is unquestioning and naive.

It is difficult to know how to apply the results. How does the reader use the idea that there is a 25% error of estimating a flow above a 5 year RI? How does the systematic bias in the steady-state rating curve affect this? What recommendations are made for further work? Why not, having gone to great trouble to calibrate a model to the flows on the Po river, evaluate the error structures across a range of values, not just lumped errors of extrapolation?

Finally the paper should be redone with attention to errors and language (the first author is working at an English University). I am attaching my annotated version of the pdf for the benefit of the editor and the authors.

Geoff Pegram

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