

Interactive comment on “A dynamic rating curve approach to indirect discharge measurement” by F. Dottori et al.

F. Dottori et al.

francesco.dottori@unibo.it

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First of all, we would like to thank Prof. Robin Clarke for his very positive comments on the paper.

General comments

Reviewer

A full evaluation of the DyRaC formula must await the results of such field trials, but the numerical simulations show that the formula has much promise. The field trials will reveal whether there are problems of instrument maintenance in remote sites, and

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of instrument security in populated areas. Clearly, DyRaC shows the way to better estimation of discharge under benign conditions, on rivers that are comparatively wellbehaved in terms of channel stability and ease of access. But in much of the world, such benign conditions are rare: the rivers in central Amazonia wend their meandering, varicosed courses through remote forest where even conventional rating curves are enormously difficult to obtain, whilst at the other extreme, the River Bermejo, a tributary of the Paraná- Paraguay system, transports and deposits enormous volumes of Andean sediment, giving an intensely-braided, constantly changing channel. It will be some time before even the most unsophisticated flow estimation procedures can be consistently used in such rivers.

Authors

We can only agree with the reviewer when he says that a full evaluation of the proposed method requires field trials in different hydrological characteristics and conditions. Moreover, since the operational procedure is based on continuous stage measurements, it is understood that benign conditions are needed for its application, that is, the monitored river must have good channel stability and ease of access. We would like to point out that the proposed method reflects the authors experience in their territory, and therefore it is mainly oriented to operational use in Italian and European rivers, especially in the most important ones, where good estimation flow has a major importance both for hydrological and hydraulic analysis. Of course, flow estimation in rivers located in impervious areas or characterized by strong sediment transport and braided channels is also of great importance, and we will include a reference to this issue in the revised paper. Finally, we thank the reviewer for giving more references on existing research lines, which will help us to improve the literature background of the paper.

Specific comments

Whilst the message of the authors' paper is very clear, their text has a number of minor errors in English spelling and grammar which should be corrected before the definitive

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version appears. We take the point: the paper will be carefully revised in order to correct English spelling and grammar errors.

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