

Interactive comment on “Comparative assessment of predictions in ungauged basins – Part 1: Runoff hydrograph studies” by J. Parajka et al.

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I liked the paper because it is a quasi-exhaustive synthesis of published research on this topic, and I appreciated all the efforts done to organize in a coherent way all the published materials.

I would like however to bring to your attention on a few studies of my colleagues and me, because they bring a complementary light on the issue of runoff hydrograph studies in ungauged catchments:

1. on the catchment similarity issue We have compared two different visions of similarity: the apparent similarity defined on the basis of observable catchment properties, and behavioural similarity judged through the use of hydrological models, two visions

C168

which are generally assumed to be identical in regionalization studies. Our results show that the overlap between the two pools concepts is surprisingly low (significant for only 60% of the catchments), meaning that more relevant catchment descriptors should be sought to better describe the actual similarity.

Oudin, L., A. Kay, V. Andréassian, and C. Perrin. 2010. Are seemingly physically similar catchments truly hydrologically similar? *Water Resources Research*, 46, W11558, doi:10.1029/2009WR008887

2. on the simulation vs forecasting issue We have made initial tests to evaluate the possibility to transfer not only parameters but also real-time hydrological corrections between gaged and ungauged catchments.

Randrianasolo, A., Ramos, M.H., Andréassian, V. (2011) Hydrological ensemble forecasting at ungauged basins: using neighbour catchments for model setup and updating. *Advances in Geosciences*, 29: 1-11, doi:10.5194/adgeo-29-1-2011.

3. on the possibility to improve ungauged simulations with point measurements We have made an extensive assessment on the possibilities to use a few available measurements to guide the transfer of parameters:

Rojas-Serna, C., Michel, C., Perrin, C. & Andréassian, V. 2006. Ungauged catchments: How to make the most of a few streamflow measurements?, IAHS Publication n°307, pp. 230-236.

On this topic, also look at the paper by Seibert and Beven :

Seibert, J. and Beven, K. J.: Gauging the ungauged basin: how many discharge measurements are needed?, *Hydrol. Earth Syst. Sci.*, 13, 883-892, doi:10.5194/hess-13-883-2009, 2009.