**Hydrology and
Earth System
Sciences
Discussions**

Interactive comment on "Comparative assessment of predictions in ungauged basins – Part 2: Flood and low flow studies" *by* J. L. Salinas et al.

Anonymous Referee #1

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This is a well-written paper which makes a significant contribution to the literature. I found it easy to understand, and the message was clearly presented. I have a few comments, which are noted below.

P421 L4: "The low flow regionalisation methods have been classified into the following groups:". I think the authors mean flood, not low flow.

The authors use the number of stations as an indicator of data availability, but halfway through the paper start to interpret number of stations and density of flow recording network interchangeably, but without justifying the equivalence of these two measures. It would be better to stick to one measure throughout the paper – I would prefer station density, since a set of ten stations in a 100 km2 region is very different to ten stations in 100,000 km2.

P422 L12-15: "The interannual variability (e.g. in terms of CV of the annual peak runoff time series) of floods in arid regions is usually bigger than in other climates, due to the associated stronger non-linearities and threshold effects in drier regions." It is also possible that the interannual variability of rainfall intensity is larger in arid regions than in dry regions and could be a dominant source of interannual variability in flood magnitude. This is certainly true when comparing arid and humid regions within one country for which I have experience.

P423 L25: "studies in less seasonal climates (e.g. New South Wales and Victoria in Australia)." I am surprised that you would describe these climates as less seasonal, though they certainly do not have significant snow. The contrast between wet winters and dry summers in Australia is very marked in some cases.

P429 L9-10 "The median absolute normalised error is 1.0 indicating that typically the methods predict twice the floods actually observed." I do not agree. ANE=1 means the error is the same magnitude as the observation, but the error can be negative or positive.

Finally, I would like to see an evaluation of the representativeness of the study areas and methods used in the Level 1 and Level 2 studies. Do the authors consider that their samples are large enough that one may confidently claim the results presented here are representative of conditions worldwide? Are there any major environments missing? Are there any important methods which deserve evaluation but for which no suitable publications were available? If anything important is missing, this would be a useful recommendation for the authors to make. To give two examples I have noted, none of the low flow study areas were classified as Tropical, and only one of the methods was process-based. Do the authors consider that these are shortcomings of the published literature that need to be addressed?