**Hydrology and
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Interactive
Comment

Interactive comment on "Ideal point error for model assessment" *by* C. W. Dawson et al.

Anonymous Referee #2

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In this manuscript, the authors discussed a particular error measure and its suitability for assessing the performance of hydrological models. The manuscript focuses on a measure named Ideal Point Error (IPE), which was developed and published earlier by others. Apparently, as the authors indicated, the IPE can have many variants (forms) that can decrease the lack of generality of the original one. I am sure that different researchers can suggest different variants and actually different error measures – in fact we can come up with endless variants of IPE and numerous error measures but one important question will remain: What is the significance/importance of this? I strongly believe that the authors failed to address this. I have the following concerns: âĂć There is no "meat" at all in this manuscript that warrants its publication in a Hydrology Journal. It is a comment on the so called IPE that can be really summarized in one page and included as part of a real paper about hydrological modelling; âĂć In literature, there are several papers that talk about model assessment, and they are much more pro-

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found than this manuscript. This manuscript does not add any significant knowledge and cannot be stand alone paper; âĂć The authors emphasised on making the IPE more general and transferable to other studies, but when I look at all variants proposed in the manuscripts, I noticed that the emphasis was placed on minor issues when more important issues were ignored. For example, all variants imply equal weight for all error measures included but who said this is right? Is RMSE as important as the bias? Isn't this dependent on the application and what the model is intended to predict? Doesn't this defeat the argument that one IPE is good for all studies? Isn't changing the weights leading to different results? Interestingly, it was noted by the authors in the recommendations. This is just one example of issues with the IPE and any other error measures, I don't mean to encourage the authors to go ahead and make a new story about how the weights can make a new error measure because I believe there are more important stuff to be done in hydrological modelling. âĂć Such work might have a little bit of significance or utility if it is extended to first apply it on a real case studies (rather than this artificially engineered errors), then take this IPE and use it as a cost function in an optimization problem to show how this can improve optimization algorithms or model calibration. This was not attempted by the authors. âĂć Some more specific comments are: o Page 1682, Lines 10-15: misleading argument because ME is meant to measure the bias, so if the RMSE is large but ME is zero, then it is indeed a good model from the bias point of view. This is what ME is intended to measure. o Page 1682, Lines 16-22: Trivial conclusion and basic knowledge. o Page 1684: There is an exaggeration in the discussion about the benchmarking issue because such error measures are really intended to compare models against each other; not really against other models applied to other case studies. This is not realistic and such ideas should not be propagated without solid proofs. o Page 1686, Lines 26-29 and also the Conclusions section: There is no way that you can claim the Naïve (t+4) can be transferred to other case studies as a benchmark model. It is study dependent. And what about other hydrological applications that are not flow forecasting? o The whole issue of correlation among error measures (reported in Table 3) does not make any sense. Does

the strong correlation (0.98) between MARE and ME means that there is redundancy?! They measure completely different things, and both need to be reported. This misleading argument should be removed if this manuscript is published anywhere. o Page 1674, Line 15: "Average" should be "Absolute" o Page 1675, Eq. 1: "MARE" in the first component should be "RMSE" o Page 1677, Eq. 3: A plus sign is missing.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 9, 1671, 2012.