

## ***Interactive comment on “Uncertainties in river basin data at various support scales – Example from Odense Pilot River Basin” by J. C. Refsgaard et al.***

### **Anonymous Referee #1**

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The paper demonstrates methods (developed and described elsewhere) for rescaling the uncertainty in measurement data from the measurement scale to other scales.

This is an interesting paper, on a subject appropriate for HESS.

The Discussion and Conclusions section is weak, being mainly a list of justifications and examples. What is needed is some insight (and a more compact and informative style). I suggest that this section is completely rewritten, once the authors have reflected on the nature and value of what they have done, and are able to make clear, relevant points of general interest. For example, what is the real role and value of statistics here? It seems to be displayed as if it is a rubber stamp of "rigor". However, the

underlying assumptions are sometimes dire (as noted by the authors; Section 5.1), but the quality of these is nowhere allowed for in the statistical analysis. What the authors appear to be arguing is that the large uncertainty associated with assumptions should be neglected, because they have no numerical values for this uncertainty, so it cannot be processed by their statistical methods. They seem also to be arguing that if this uncertainty is not neglected, then "The only alternative in most cases would in practice be to make no uncertainty assessments at all" (Page 1965 line 26). Later (Page 1966 line 7), they mention "other sources of uncertainty that can only be characterised qualitatively". In summary, they seem to be arguing that the elephant in the room (i.e. sources of unquantified uncertainty) should be neglected, just because they know how to handle the parrot in the room rigorously (i.e. sources of quantified uncertainty). If their aim is really "to make uncertainty aspects a recognised factor in the whole water management process" (Page 166, line 2), it is questionable if this will be helped by promoting "rigorous" analysis of what will often be unimportant and misleading measures of uncertainty. Surely, the whole point of estimating uncertainty is to come up with the best estimates possible, taking into account all known sources of uncertainty. Given, then, that the authors are willing to make the necessary "simplified expert judgements" (Page 1964 line 21), it is odd that they appear not to be willing to make the necessary expert estimates for the unquantified uncertainties so that the best estimates possible can be produced using their statistical methods.

There appears to be nothing in the paper about how the rescaled uncertainty estimates could be tested.

Minor point.

p. 1957, line 23. It is odd that a factor of two can be used in this fashion for estimating the uncertainty in the cross-section average total N. (The paper by Rode and Suhr which is cited was not available to me). It would seem more likely that the overall uncertainty in the average is slightly worse than -50% to +100% (not 10%, as seems to be claimed).

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Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 3, 1943, 2006.

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