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Hydrology and Earth System Sciences Discussions

Interactive comment on "Climate change impact assessment as function of model inaccuracy" *by* P. Droogers et al.

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Main Findings

The idea for conduction such procedure is very relevant as most climate impact lack this kind of uncertainty analysis. Hence, I encourage the main objective of this paper which is to quantify the influence of models error relative climate scenario & impact studies.

I have, however, two main comments before accepting it:

1. Calculation of MSR values should be re considered: after filling in a simple example where the accurate model produces 50 for Epot and the In accurate 100. Suppose

the reference situation is the same for both models, than the MSR is strongly negative. But still the average of both models ˜ 75 is still a huge deviation from the reference case. 2. I miss a literature review on parameter uncertainty in hydrological modeling. The novelty of such method should stem form a thorough literature research which is lacking in this paper. There is quite some research in this area. Please have a look at e.g:

* Borman (2005: http://www.adv-geosci.net/5/43/2005/adgeo-5-43-2005.pdf

* Winsemius et al. (2006) http://www.hydrol-earth-syst-sci.net/10/339/2006/hess-10-339-2006.pdf

* Also do a search on the papers by K. Beven

Some specific comments

From only reading the abstract, it is not clear what the main findings of the paper are. For example:

* it is not clear how 'impact assessment' is defined in this study.

* The impact assessment is a function of a scenario' generates confusion. Do the authors mean the climate scenario. And if so, are they referring to the correlation between scenarios and impacts?

* What are extreme climate scenarios: Those that reflect a high increase in global temperatures or a scenario that shows a lot of variability / extremes?

Introduction: The division between GCMs and other simulation models is not necessary. Just make your point right from the beginning stating that there is uncertainty in hydrological models and crop growth models. I'd rather include a long section on existing literature on this subject as stated above.

Table 4: In the header it says 'Error by model inaccuracy (%)'. And than beneath again W(%), which suggests the other numbers are not % .

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