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Hydrology and Earth System Sciences
Discussions

Interactive comment on "HESS Opinions "Integration of groundwater and surface water research: an interdisciplinary problem?"" *by* R. Barthel

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I would like to thank the reviewer for his encouraging comments and also for his critical remarks pointing out some deficiencies in the manuscript.

The reviewer focuses much on the differences in time and space scales of interest. I am actually not sure if he/she is right when he says that these are mainly responsible for the separation of the two research fields. In fact, I think this is just one out of many reasons for the separation, and I don't think it is a very important one. It would be very interesting to discuss this issue in much more detail, but I think this lies a bit outside

the scope and objectives of this opinion paper. It is true that I did not emphasize the issue of long time scales. It is also true that the paper does not, using a real example as the reviewer suggests, illustrate the time/space process variability and interactions between the systems. It seems to me that the reviewer had wished to see a much more "physics-based" discussion of the interaction between groundwater and surface water. I understand the authors wish for a more practical real world example, but I didn't wanted this to be a research paper, discussing physical aspects of integrating compartments. The objective this opinion paper was and is to point out deficiencies in the cooperation between surface water and groundwater hydrologists on a very conceptual, one could maybe even say "social" level. The paper should form a starting point for thinking about how to achieve better integration by acknowledging different traditions. Looking at the comments made by Referee #1 and G. Bordini, it seems to me that I have to point out much more clearly what the scope and objectives of the paper really are.

The reviewer says that he does not agree with my viewpoint that GW and SW hydrology can never be brought together. He is absolutely right to not agree, but I would like to point out that this is not what I am saying (or what I wanted to say). I think that GW and SW hydrology can very well be integrated but it is a prerequisite to acknowledge that they are quite different.

I don't think that I should follow the reviewer's suggestion to focus more on the scientific issues. What he suggests would make a very interesting research (or review) paper, but it would lead away from the points that I think are important.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 11, 2011, 2014.