

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

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Let me first apologize for not responding earlier. I am glad to see that the referee seems to like my opinion paper and finds it useful.

I partly agree that the examples might not be very well integrated, or maybe not well explained. I still think they are helpful and I know that many colleagues experienced related problems. After all, these examples formed the main starting point and motivation for me to think about this topic and finally to write this paper. I will think about a way to better link the examples to the rest of the manuscript. I would also like to point

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out that the examples on groundwater recharge and baseflow are described in much more detail in a previous paper (Barthel, 2006), which is an open access paper and thus available to all interested in more details.

I also (partly) agree that a discussion on which problems require cross-disciplinarity (I prefer inter- in this context) and which don't could be included. Such a discussion would however be a lengthy one, as it always depends on the specific problem context and the different perspectives on a problem. General and simple answers are not possible. In many cases, it will be more the socio-economic than the physical problem setting that is decisive. I think the main message I would like to convey (following the recommendations of Szostak (2002)) is that we should always start with a careful analysis whether or not an interdisciplinary approach is necessary or not. I should maybe point out more clearly that step 1 in Szostak's workflow cannot be simply concluded with a simple yes/no answer. It needs to be analysed in an iterative approach in conjunction with steps 2-5. I will discuss this more thoroughly but I will avoid giving examples or a list of problems that require interdisciplinarity.

Barthel, R., Common problematic aspects of coupling hydrological models with groundwater flow models on the river catchment scale. *Adv. Geosci.*, 2006. 9: p. 63-71.

Szostak, R., How to Do Interdisciplinarity: Integrating the Debate. *Issues in integrative studies*, 2002. 20: p. . 103-122.

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

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