

Interactive comment on “The Hydrological Open Air Laboratory (HOAL) in Petzenkirchen: a hypotheses driven observatory” by G. Blöschl et al.

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We would like to thank the anonymous reviewer for her/his positive and insightful comments on the manuscript. Below issues raised by the review are printed under inverted commas.

C3338 “1. I am not clear about the main difference between the traditional experimental catchments, the recent CZOs, and the HOAL. Is it the hypothesis driven approach versus lets instrument the whole catchment and go on a fishing expedition? Are they the same?” Response: We believe we are already spelling out these differences: ‘While these observatories bear a lot of resemblance to the more traditional research

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catchments they differ in three important ways. (a) Similar to astronomical and meteorological observatories their objective is to provide long term facilities that transcend the lifetime of individual projects. (b) Even more so than their more traditional counterparts they are geared towards performing interdisciplinary research. (c) Often they are designed as networks to assist in performing collaborative science within the research community.” pp. 6687-6688

C3339 “2. The authors have glossed over the site selection other than to say that it was found to be suitable because of the range of runoff generation mechanisms, long term stream record and proximity to IKT. I understand opportunism often plays a role in this but wonder if there were other candidate catchments that were under consideration which didn’t meet the bar. ... For instance, the issue of scale is mentioned in passing but the catchment scale of 66 Ha is not mentioned till Section 3.” Response: We have added information to section 3.1.1 to address this question in more detail.

C3339 “3. Is authorship ever an issue if so many students are working on a single site? Or does the pursuit of specific hypothesis right from the beginning offer clarity of roles, which a more general fishing expedition might not?” Response: Each student needs to prepare and defend a PhD proposal in their first 6 months in the programme. These proposals specify first authorship. There have been minor communication issues but they did not turn out to be a problem at the scale of the laboratory.

C3339 “3. Have there been failures? For instance where the scale of the question was found to be unsuitable for the catchment size because the effects of things happening outside the catchment outweighed the catchment-level effects?” Response: Yes, there have been three types of failures: (a) Regarding instrumentation. These are already detailed on pp. 6718-6719, second to fifth paragraphs. We have now added more detail on the issues with the soil moisture instrumentation. (b) The implementation and the research tended to take longer than anticipated, so time management is critically important. This aspect is explored in more detail in the publication on the doctoral programme (Blöschl et al., 2012). (c) The outcomes of the hypotheses were not always

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fully conclusive. This aspect is already discussed on pp. 6722-6723.

C3339 “3. Likewise were there unexpected successes where two students who discussed their work together ended up changing their conclusions that might not have happened if they were not collaborating.” Response: Yes, there were two types of unexpected successes: (a) Regarding instrumentation. These are already detailed on p. 6719, last paragraph and p. 6720, first paragraph. (b) Regarding hypothesis testing: These are already detailed on p. 6724, third and fourth paragraph, and p. 6725, first paragraph.

C3340 “3. Does having the students all physically in the same space matter as much as the existence of a common experimental site?” Response: This is an interesting question. We believe that, based on the experience in the doctoral programme, both are important (see Blöschl et al., 2012) but it is difficult to say which one would be more important.

C3340 “4. Section 4 was a rich section and I felt more could be drawn out of it by tying it with Section 3.2.2 as I have suggested below.” Response: Section 3 of the manuscript has now been shortened and part of the material merged into section 4.

C3340 “5. Would it be possible to give a sense for the total budget for this sort of thing?” Response: We felt it would not be appropriate to give figures on the budget given that costs differ between countries. The number of people involved and the list of instrumentation will allow readers to draw up budgets in the context of their own envisaged settings.

C3340-3341 “I think the paper Section 2 onwards could be slightly improved in structure. . . . Please note - this is only a very slight rewording and organization not a drastic rewrite except for the recommended merger of the current Sections 3.2.2 and 4.” Response: We agree that what the reviewer calls a ‘more linear’ structure is one logical possibility of organising the material. We have accommodated the reviewer’s main point of merging material from current sections 3.2.2 into 4. It is felt, however, that

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the current structure of the section is similar in terms of clarity and we would therefore prefer to keep it.

C3341 “I was also confused by the use of many different terms – specific hypotheses, detailed experiments, dissertation research – for the essentially same set of activities. Sections 3 and 4 sort of follow the same ideas presented in Section 2.1 but not quite the same terms so it is hard to track.” Response: The terms have been checked and made consistent where necessary.

C3341 “Finally, Section 3.2.2 is a little unnecessarily detailed and I felt belied the spirit of the paper. Response: Section 3 of the manuscript has now been shortened and part of the material merged into section 4.

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