

Interactive comment on “Uncertainty in geological and hydrogeological data” by B. Nilsson et al.

B. Nilsson et al.

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Comments to review comments to “Uncertainty in geological and hydrogeological data” by B. Nilsson et al.

Anonymous referee #1

Specific comments:

1. The referee recommends us to provide more details of the HarmoniRiB classification. We agree on giving more details on the HarmoniRiB framework, when the planned special issue paper describing the HarmoniRiB methodology is most likely not ready when the special issue is published. Brief descriptions of the HarmoniRiB framework have therefore been added to the sections 3.3, 3.3.1 and 3.3.2.

2. The referee #1 explicitly mention table 7 to be described more thoroughly. We be-

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lieve the referee instead of Table 7 has Table 9 in mind. Thus our answer relates to Table 9. In our conclusions we do not refer specifically that one of the tables should be used for development water management plans. The water management process is much broader and includes many more aspects than geological data and uncertainty. Instead we are discussing why uncertainty assessments in general and data uncertainty in particular are important to include in the water management process. In this perspective we argue that the concepts and knowledge described in the present paper may be useful support.

3. Also here the referee #1 mention table 7 but we believe you think of Table 9. We have added the following text to page 15 (top): “When we talk about instruments under calibration in Table 9 we mean instruments related to calibration (i.e. the inversion routines such as PEST), not the instruments related to the data. Therefore the instrument uncertainty is irrelevant.”

4. As recommended by the referee has chapter 3 and 4 been merged together in such a way, that the scaling issue chapter now is condensed to a short section (now Section 3.1), which is incorporated into the new chapter 3 on “Uncertainty in hydrogeological data”.

Technical corrections:

All technical corrections (point 1 - 8) have been changed exactly as recommended by referee #1.

Anonymous referee #2

The comments given by referee #2 are identical with the comments we received as an Quick Report. To a great extent has the referees comments been used to modify the manuscript into the latest version. Our comments to referee #1 by 3rd August 2006 are repeated in the text below (in italics):

BN-GEUS / 3. August 2006 Dr. Jim Freer Editor of HESS special issue on data uncer-

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tainty

Re.: Revised manuscript of HESSD-2006-0082

The resubmitted manuscript “Uncertainty in geological and hydrogeological data” by B. Nilsson, AL Højbjerg, JC Refsgaard and L Troldborg has carefully been revised based on the valuable comments and suggestions provided by the Editor and quick reports from two anonymous reviewers.

General comments

In general has the manuscript undergone a considerable revision.

- Chapter 2. Shortened, restructured and sever rewrite as suggested by editor.
- Chapter 3 and 5 in the original manuscript is compiled together in a new Chapter 5 of the revised manuscript.
- Chapter 4 on scaling issues has been shortened, restructured and sever rewrite as suggested by editor and quick report with the poor evaluation.
- Chapter 6 (Discussion and conclusions). Discussion on future research areas has been added.
- The editor suggests reduction of the numbers of illustrations. We have reduced the number of figures from 5 to 3. But on the other hand have the number of tables been increased from 7 to 9 tables. Reason for this is that Fig. 1 in the original manuscript was not really necessary. Fig. 3 in the original manuscript was deleted due to removal of the example of application on use of TPROGS. Addition of Table 5-7 in the new manuscript is due to a need of a more background information about the HarmoniRiB methodological framework on uncertainty.
- The poor evaluation quick report point out that “the bibliography was erratic with some very good citations but also very important lacks” without giving more specific instructions on lacks and errors. We have tried to brush up the references in relevant issues. Especially a section on applied geostatistical literature has undertaken sever changes in section 2.3 (p.9).

Specific comments

- Effective porosity. The quick report with poor evaluation emphasise that it is not the

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porosity but effective porosity that can be determined using tracer tests. We fully agree and have made the needed changes. - Hydraulic conductivity. In addition we agree on that the hydraulic conductivity of course can be determined by tracer tests. However, tracer tests would never be the first choice if you should choose a method to determine the hydraulic conductivity with. That's why we have not classified tracer tests as a common or relevant method.

24.11.2006 Bertel Nilsson

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 3, 2675, 2006.

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3, S1589–S1592, 2006

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