Geophysical Research Abstracts,
Vol. 11, EGU2009-5006, 2009
EGU General Assembly 2009

Lost in translation ? Thoughts on the interface between hydrological modellers and experimental hydrologists

K. Beven

Lancaster University, Environmental Science, Lancaster, United Kingdom (k.beven@lancaster.ac.uk)

There have been a number of papers over the years that have encouraged hydrological modellers and experimental hydrologists to work more closely together. There have been a number of papers that have tried to encourage this by providing ways of using different types of field data to evaluate models, rather than just judging models on their performance in predicting discharge. Both modellers and experimentalists have a common aim: they want to get the right results for the right reasons and yet the fact that this session has been convened suggests that at least some people perceive that there are still communication barriers between the two groups of hydrologists (and still relatively few people who feel at home in both worlds). This presentation will provide some perspective on the issues of translation involved by discussing the following:

1. All models are wrong so field hydrologists do not need to take them seriously
2. Field hydrologists learn a lot about the response of one or two places in a catchment but it is difficult to generalise that knowledge even to the next hillslope.
3. Field understanding requires that models should incorporate more and more complexity which is in conflict with issues of parameter identifiability and equifinality
4. Models can be considered as hypotheses about catchment responses, but field data collection programmes are not structured in a way to test the adequacy of those hypotheses
5. New measurement techniques are needed for proper model testing

In a period when more and more hydrological agencies in different countries are moving towards “models of everywhere” (and where the models used often do not reflect the field evidence in more than a cursory way) establishing a dialogue about how best to use field data in model testing is becoming more and more important. One way of formulating a dialogue would be to engage both groups in discussing the related scientific questions of what constitutes an adequate hypothesis test and how to assess the value of data in hypothesis testing.