

Interactive comment on “Identification of glacial melt water runoff in a karstic environment and its implication for present and future water availability” by D. Finger et al.

C. Leibundgut (Referee)

chris.leibundgut@hydrology.uni-freiburg.de

Received and published: 8 April 2013

Overall assessment

Scientific Significance: excellent

The manuscript represents a substantial contribution to scientific progress within the scope of Hydrology and Earth System Sciences by its holistic approach dealing from hydrology up to the complex regional water resources systems.

Scientific Quality: excellent

The scientific approach and applied methods are valid. Also the results are discussed in an appropriate and balanced way.

C706

Presentation Quality: excellent

The scientific results and conclusions are presented in a clear, concise, and well-structured way. The number and quality of figures/tables is appropriate. I am not competent to perform an English language check.

Further aspects:

The paper addresses relevant scientific questions within the scope of HESS by presenting novel concepts (holistic), ideas, tools (combination of methods and techniques and a lot of new data).

There are substantial conclusions reached as well scientifically (i.e. karst model) and regionally (i.e. glacier runoff).

The scientific methods and assumptions are valid and clearly outlined. In particular the validation occurs with independent data (i.e. tracer data) which is a modern concept but not always used.

Without doubt the results are suitable and sufficient to support the given interpretations and conclusions.

The description of experiments and calculations is clear, supported by the tables and figures, is complete and precise to allow their reproduction by fellow scientists.

The authors give proper credit to related work. The reference “Tracer experiments in temperate alpine glaciers” in Leibundgut Ch., P. Maluszewski, Ch. Külls: Tracers in Hydrology. Wiley-Blackwell, 2009: 310-321 would address directly the issue on page 2746.

It would be an improvement if they clearly indicate their own new/original contribution more explicitly.

The title reflects clearly the contents of the paper.

The abstract provides a concise and complete summary.

C707

The overall presentation is well structured and clear with a small restriction: there are some redundancies probably due to the single contributions provided by the single author groups.

All mathematical formulae, symbols, abbreviations, and units are correctly defined and used.

Should any parts of the paper (text, formulae, figures, tables) be clarified, reduced, combined, or eliminated? : no, except the mentioned redundancies.

The number and quality of references are appropriate. I made a proposal for a supplement above.

The amount and quality of supplementary material is appropriate.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 10, 2743, 2013.