

Interactive comment on “Response to recharge variation of thin lenses and their mixing zone with underlying saline groundwater” by S. Eeman et al.

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I found this an interesting paper about the dynamics of shallow freshwater lenses. It is a very relevant subject from a theoretical point of view, but also from a very practical point of view. I have only some minor comments and therefore recommend publication by HESS.

- Recharge is treated as a sine function. This is indeed to a certain extent the case for northwest Europe with higher recharge in winter and (almost) no recharge in summer. However, as for instance figure 3a shows, recharge consists of peak values superimposed on this sinuous evolution. These peaks can be substantial. Can the authors comment on the influence of this on their conclusions. Do these peaks are of too low

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frequency to have any substantial effect on the rainwater lens dynamics? Was this testes?

- Authors state that volume of freshwater includes the freshwater in the unsaturated zone. I do not understand how this is implemented in the analyses. Flow in the unsaturated zone is include in the SUTRA calculations? Thickness and soil type of the unsaturated zone must have an influence on the results?

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 9, 1435, 2012.

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