

Interactive comment on “Time scales of regional circulation of saline fluids in continental aquifers (Armorican massif, Western France)” by A. Armandine Les Landes et al.

Anonymous Referee #1

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Review of “Time scales of regional circulation of saline fluids in continental aquifers (Armorican massif, Western France)” submitted by A. Armandine Les Landes et al. to Hydrology and Earth System Sciences (Hess).

The first recommendation I would like to make is the very simple but very important addition to the title of this paper: insert the term “crystalline rock” after “continental”, so that the title becomes “. . .saline fluids in continental crystalline rock aquifers. . .”. I have been working a long time on saline fluids in continental sedimentary basins but have not closely followed the literature on waters in crystalline rock aquifers, such as the Armorican massif. If I had been paying more attention upon receiving the request

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for a review, I would have suggested the selection of someone else as a reviewer.

I would also include the term “crystalline rock” or crystalline basement” in the abstract and in key search terms.

I have read through the manuscript, and the research results seem both reasonable and well-presented. However, it would have been useful to have included some of the isotopic results mentioned in passing on p. 6607, line 18, particularly oxygen-hydrogen systematics.

I can see influx of marine waters into the system by density-driven flow during marine transgressions. It is less clear to me from the manuscript how marine waters become displaced or how mixing occurs with meteoric waters after a transgression.

There does seem to be an empirical relation between chloride concentrations and time scales of regional circulation, but a lot of assumptions have gone into explaining why this is (Appendix A).

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 11, 6599, 2014.

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