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Interactive comment on "Managed aquifer recharge with reverse-osmosis desalinated seawater: modeling the spreading in groundwater using stable water isotopes" *by* Yonatan Ganot et al.

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This manuscript describes a case where water of unique quality recharges a local aquifer. The manuscript looks experimentally and through MODFLOW modeling at the expansion and mixing of the new water in the aquifer for a specific setup where recovery wells are located around the recharge pond. The concern here is desalinated water, and the main tool to distinguish these water from the background is stable isotopes.

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Discussion paper

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Sincerely, I am not sure how to treat this manuscript. On one hand addresses a question of increasing concern (globally, not only in Israel), and it describes a work properly conducted, including a very nice combination of isotopic work and a flow and transport model. On the other hand, I'm asking myself at the end of the day "what's new?" Is there something that can really be learned from this manuscript? Is it describing something that was not clear from the beginning?

The innovation that I see in this paper is very specific, the use of stable isotopes to very specific types of waters. The uniqueness of the specific case is the specific O-H numbers that create very distinct end members, that possibly can lead to the ability to distinguish the mixture at very wide range of mixing ratios (this however is not explored). But mixtures of two end members, including by O-H isotopes, is not new, as the authors acknowledge

Therefore, my requirement for this paper to be accepted is to improve the description of the unique case study throughout the manuscript, so that the innovation will be much better explained, highlighted, and discussed. If properly done this can probably be a good reference study

On a more technical level: 1. Since the authors describe model predictions, I'm not sure if past tense is the appropriate. In the same context, instead of "results show" I'd use "results suggest"

2. I do not think the model neglects fractionation (line 118). It is you (the authors) that neglect such a process. But why neglect? Is there a reason to think such a process is relevant here?

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