Interactive comment on “Field-based groundwater recharge and leakage estimations in a semi-arid Eastern Mediterranean karst catchment, Wadi Natuf, West Bank” by Clemens Messerschmid et al.

Clemens Messerschmid et al.

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Received and published: 26 October 2018

Dear reviewer,

thank you very much for your comments. Please find enclosed - our answers - two additional files on longterm rainfall and key date spring flow

best regards, also on behalf of my colleagues,

Clemens Messerschmid

Initial remarks & context:

For our model, we measured rainfall, temperatures and soil moisture over a period (2003/04 – 2009/10), resulting in a set of 7 years of DP-values for 8 respective soil r (Fig. 2). We normalised rainfall (P) and recharge (DP) for each station/sub-catcher area values (mm/a). Such DP over P delivers the recharge coefficient (RC) for each s respectively. Out of this, we formed average RC-values (%) over the whole period of station and used this as our estimate of long-term average recharge (station- & forr). This is based on the assumption that the annual rainfall, recorded during these seven indeed represent long-term annual weather patterns and average rainfall heights.

The important question asked by the reviewers was:

**How representative is this 7-a period for long-term meteorological records?**

In general, a typical long-term average of meteorological records should cover at least 30 years. Therefore, our (coincidental) 7-year period should be compared to long-duration rainfall.

### Procedure:

#### Representativeness of daily measured springs

<table>
<thead>
<tr>
<th>Initial remarks &amp; context</th>
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<td>The annual combined spring discharge of the respective spring group of the entire catchment and derived from the spring group discharge is very reliable.</td>
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The following statistics should be kept in mind regarding the daily measured springs distribution and the relative shares of the daily measured springs. The 7-year period should be compared to long-term meteorological records.

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**Fig. 2.**