We thank Dr Hughes for his valuable comments. We prepare to apply his suggestions to improve the manuscript as follows:

1. *Definition of what geographical area the paper covers. The title says "Europe" but Figure 2 suggests the inclusion of Western Asia, North Africa and the Middle East. Greater clarify as to the geographical zone covered would be appreciated.*

   Answer This is true. The simulation domain covers Europe including the Mediterranean. The manuscript title and content will be updated accordingly: "A large-scale simulation model to assess karstic groundwater recharge over Europe and the Mediterranean" or similar. Only minor parts of the domain may also be attributed to Western Asia and we decided to not mention them explicitly.

2. *Following on from the above point, given the areal extent of the study, the recharge modelling results culled from the literature is rather limited. A quick literature review of the results of recharge modelling in Carbonate aquifers reveals a number of papers:*
   (...)
   These are just a selection and demonstrate that the Table 3 is somewhat limited. Additionally the UK examples are from a very large scale study by Arnell and would benefit again from a more detailed study of the literature.

   Answer We agree that a more extensive list of independent studies will improve the quality of the analysis. The list of originally 22 studies from 9 countries will be expanded significantly in the revised version of the manuscript especially including some more references within the UK. A preliminary check indicated that 3 of the references suggested by the referee can unfortunately not be used: One of them (Fleury et al., 2007) was already included in the original list in Table 3. The other two (Bakalowicz and Mangion, 2003, and Vilhar et al., 2010) do not provide quantitative information on mean annual recharge volumes, which is needed to evaluate the model.

3. *The reader is rather rushed into the main part of the paper, and detailed comments are provided below on the introduction. However, it is strongly suggested that to provide a proper context for the equations in Section 2.1 then a basic explanation of the main features of a karst system is provided.*

   Answer We agree that the elaboration on the model structure and its novelty compared to the previous version of the model have to be elaborated in more detail. A similar suggestion was given by referee #1. We will update subsection 2.1 accordingly. Please also see our response to comment 1 of referee #1.

4. *How is river discharge used to calibrate the model? It is mentioned at the start of the paper (line 7, pg 7890), but not addressed. Given the lack of runoff in Karst regions, can this be used as calibration parameter?*

   Answer We used observed soil moisture time series from the International Soil Moisture Network (ISMN) and observed actual evaporation time series from FLUXNET as recharge related observations since discharge observations are not available (as correctly stated by referee #2). To account for that, and uncertainties that go along with the differences of observation and simulation scale, we defined rather weak parameter selection criterions in our parameter confinement procedure (please also see our response to *Other Comment* 3 of referee #1)

We agree with all specific changes and we will apply them in the revised version of the manuscript.