We thank the Reviewer 2 for his/her insightful comments and suggestions. We have implemented all applicable recommendations that improve the quality of the presented work. Point-by-point responses are given below. In the following, the comments raised by Reviewer 2 are split into parts and copied in bold fonts to facilitate understanding of our answers.

REVIEWER #2

General remarks

The week point of the article is the use of the E-OBS observation only. I guess that C4630 with CRU or University Delaware data or data obtained from local station measurements not present in E-OBS the results will be different. Therefore the statement "best preforming model" is misleading. Interpolation of already interpolated data (with well known problems with extreme values, regional coverage) into smaller areas can cause serious problems. This should be discussed in more detail and the specific choice of the reference should be justified.

We agree with Reviewer #2 that use of alternative observational data might have produced different results. However, use of E-OBS observational data has many advantages; see e.g. page 9110, lines 14-24 in the discussion paper. To further justify our choice, in the revised version of the manuscript, we have added the following text (page 7, lines 218-224).

"Results from any validation activity can be sensitive to the choice of the observational reference. It is also worth mentioning that in each of the considered countries, where CLIMB catchments are located, there are additional stations not considered for E-OBS. However, access to and use of their data is often problematic, due to administrative limitations of the local competent authorities in distributing the data, long inactivity periods of the stations, measuring errors, missing values etc. Thus, in a multi-faceted project like CLIMB, E-OBS allows to overcome technical limitations, providing regular gridded data of the same quality and standards for all areas of interest."

As mentioned in page 9110, lines 14-24 of the discussion paper, standardization of observational data and climate model outputs is of particular importance during the stage of model intercomparison. This is the stage where the present work focuses. In a subsequent phase of the CLIMB project, where we focus on future climate assessments, we downscale climate model results and use local data to bias correct the small scale fields. However, discussing this issue further is beyond the scope of this paper.

The scientific aims of the paper should be clearly specified. In line 10 on page 9111 the go goals of CLIMB and the paper are presented. Both aim at the reducing of the uncertainty. What are the differences when any? The sentence "A major source of uncertainty is certainly….." is not understandable. What is the wide scattering? State clearly what the problems are.

We thank the Reviewer for his useful comment. To avoid misinterpretations, we have rephrased our wording to clarify the general objectives of CLIMB, as well as those of the present work (page 4, lines 109-119 in the revised manuscript):

"The general goal of the CLIMB project is to reduce the uncertainty of the process of assessing climate change impacts in the considered catchments. Within the chain of models and data leading to the evaluation of the hydrological response, a major source of uncertainty is certainly related to the wide spread of climate signals simulated by different climate models. That said, our work aims

at reducing the uncertainty component introduced by the different climate model representations. To pursue this objective, we intercompare the performances of different RCMs from the ENSEMBLES project and select a common subset of 4 models to drive hydrological model runs in the catchments. More precisely, this paper uses the newly released E-OBS fields, to: a) evaluate the performance of ENSEMBLES RCMs in dealing with hydrologically relevant parameters in six Mediterranean catchments, and b) provide validated data to be used for hydrological modeling in successive steps of the CLIMB project."

The use of the CM abbreviation is misleading. I suggest to use RCM when a regional climate model is meant and accordingly GCM (for example line 10/9112)

We do not understand the reason why the CM acronym is misleading. It is defined at the first line of the Introduction of the discussion paper. Moreover, this acronym has been used in many works to refer to Climate Models, regardless of their type (i.e. RCMs or GCMs).

Page 9108
Line 15 sentence too long

Following the Reviewer's suggestion, the sentence was split into two parts; see page 2, lines 35-40 in the revised manuscript.

Line 25 key role, key role plays the ocean, perhaps only "important"

We believe that the general meaning of the sentence is clear. We also note that a key (or important) role in CMs is for sure played by the atmosphere and atmospheric transport processes. The ocean also plays a key/important role as suggested by the Reviewer, but scoring the importance of different players goes beyond the scope of our work.

Page 9107
Line 5 Only older studies are listed, add some recent studies, (only example : Senatore et al (2011) investigated regional climate change projections for a Mediterranean basin in southern Italy, lot of studies cover the Jordan River etc.)

The discussion paper refers to several recent studies. We have also included a reference to Senatore et al. (2011), as suggested by the Reviewer; see page 2, lines 50 in the revised version of the manuscript.

Page 9110 Line what "is to produce values"

In the revised version of the manuscript we changed "values" to "reference set".

Page 9112
Line 15 What is an uniform setting? Line 15/20 In separate effort…, is not understandable

In the revised version of the manuscript we changed "uniform" to "common", and "separate effort" to "subsequent activity".

Page 9113
Line 10 All scenarios had equal probability. Perhaps widely used

We do not understand the Reviewer's comment.

Page 9114
Line 15 It is a problem, but you mean that it can be easily be detected and corrected

This comment does not require any action from our side. Clearly, since dry days have zero rainfall, using zero as a flag for missing values is problematic. This issue is worth noticing.

Line 20 For some models (see below) where below?

In the discussion paper, the models are listed in lines 20 - 24; i.e. two lines below the point the Reviewer refers to.

Page 9115
Line 5, I think E-OBS is not related to CRU?, Clarify

Following the Reviewer's suggestion, we rephrased our wording to avoid misinterpretations; see page 7, lines 207-211 in the revised version of the manuscript.

Page 9116
Line 15 what is an upcoming communication, another paper?, remove (announced papers usually never appear)

Since we are working on such a paper and the reference to the subsequent work help the reader to better understand our choices, we cannot eliminate this statement.

Page 9120/9121
Line 20 "In essence ..", this a very week statement , some numbers should be added here
Page 9123
Line 5 There is excellent observed data for the Alpine region available, and discussion of the undercatchment etc.. (e.g. Frei et al., 2003, Smiatek et al., 2009 show ranges in the observational reference from various sources)

The objective of our analysis is to check whether general seasonal patterns are reproduced by climate models, rather than strictly verifying E-OBS. Hence, we limited our analysis in assessing the reproduction of well known seasonal and climatic behaviours, based also on literature references. Providing exact numbers is beyond the scope of this article, since it requires access to and analysis of local data. Moreover, as already pointed out in one of our responses, at this phase of the CLIMB project we skipped using different sources of data to maintain the same quality and standards for all areas of interest.

Others
The Figures are not readable in the printed version, even in the electronic only with a large zoom

Figures 3-10 were designed and sized to fit in an A4 page, which is the format for regular HESS articles. For discussion papers, HESS uses a landscape format which is problematic for full-page sized figures. We were aware of this issue, but splitting the original figures into subfigures would be confusing. In any case, symbols and text will be easily readable in the final version of the manuscript published in HESS.