

Interactive comment on “Seasonal forecast verification and application in times of change” by Yoav Levi and Itzhak Carmona

Anonymous Referee #1

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To facilitate the assessment of risks, seasonal forecasts are usually expressed as the deviation relative to a 30-yr average condition for end-users. However, the climate and socio-economic changes during this period may enable the deviation questionable. To eliminate these changes, this paper introduces a method, which uses the previous year's season condition as a reference for the next season, to evaluate the skill and usefulness of the ECMWF system 4 (Sys4) seasonal June-July-August (JJA) temperature forecasts, wherein the ECMWF ERA-Interim reanalysis is employed as the surrogate observations. The results may be valuable for the policy-makers who are interested in the application of seasonal forecasts. The paper is organized logically and well writing. However, I still have a few concerns that need to be addressed.

Major comments:

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1. Policy-makers or end-users may have great interests on the impacts of extreme event to the socio-economy, agriculture, and environment. In this paper, however, the metric of “Fiasco score” was constructed based on the above-normal and below-normal condition which does not simply equal to extreme event. The skill of Sys4 in terms of capture the extremes event should be added or discussed in the context.

2. As Figure 6 shows, the forecast skill derived by the new method (i.e., using the previous year's season as a reference for the next season forecast) tends to be lower than that derived from the traditional 30 year reference period. As well, the authors concluded that the new method is obviously not suggested to replace the robust traditional 30 year reference period (see Line 241-242). If so, why you attempt to use it?

3. In my view, the precipitation or streamflow forecasts, as compared with temperature, may have more significance on end-users practice. Why you put the primary attention just on temperature, rather than precipitation?

Specific comments:

1. Section 2 – Model data. Please provide the archive website for ECMWF system 4 system data and ERA-Interim reanalysis, respectively.

2. Line 94-95. Please add an example table to explicitly illustrate the contingency table, so that the readers are more easily to understand it.

3. Line 101-102. Please provide more details (e.g., equations) for the calculation of AUROC.

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