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Interactive comment on "On the skill of raw and postprocessed ensemble seasonal meteorological forecasts in Denmark" *by* Diana Lucatero et al.

Anonymous Referee #2

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The paper is well written and the results could be of interest for researchers testing extended range and seasonal forecasts especially for hydrological applications. Therefore the paper is worth to be published after some minor corrections and/or inclusions of additional explanations. 1. On page 3 you describe the ECMWF forecast data. I was wondering why there some months with 15 and some with 51 members? Could you explain this? Did you include some corrections in the skill scores for the 15 ensembles (e.g. Müller, W.A., C. Appenzeller, F.J. Doblas-Reyes, and M.A. Liniger, 2005: A Debiased Ranked Probability Skill Score to Evaluate Probabilistic Ensemble Forecasts with Small Ensemble Sizes. J. Climate, 18, 1513–1523, https://doi.org/10.1175/JCLI3361.1) in order to make them comparable with the 51 members? Have there been any model changes within these 24 years? If yes, has

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this been taken into consideration? 2. Also on page 3 line 34 you give the dimension of 662x12x7x24. Does this mean grid cells x months x forecasts x years ? Could you please clarify this? 3. On page 4 you explain the the QM approach. In line 16 you write that the EDF has been trained. I would rather call this process fitting. 4. Regarding the skill (from page 5 onwards): The CRPS is a global score combining the reliability and sharpness aspects. You mention that you use the CRPS as a general measure of accuracy, but you don't say why it is general. I think this should be included for readers who are not familiar with the CRPS (e.g. Gneiting, T., A. Raftery, A. Westveld III, and T. Goldman (2005), Calibrated probabilistic forecasting using ensemble model output statistics and minimum CRPS estimation, Mon. Weather Rev., 133(5), 1098–1118) 5. Have you tried to eliminate the drizzle effects and include different thresholds for zero precipitation? This could be interesting for analysing the dry periods. 6. I agree with Reviewer 1 that the Figures are difficult to read. Regarding Figure 2 it would be interesting to compare the boxplots of the forecasts with boxplots of the climatology in order to see the median, interquartile range. 7. I don't think that the PIT diagram has to be explained in that detail and you could delete Appendix A and Figure A12. You can find the same Figures in Laio, F., and S. Tamea (2007), Verification tools for probabilistic forecasts of continuous hydrological variables, Hydrol. Earth Syst. Sci., 11(4), 1267–1277 and in Thyer, M., B. Renard, D. Kavetski, G. Kuczera, S. W. Franks, and S. Srikanthan (2009), Critical evaluation of parameter consistency and predictive uncertainty in hydrological modeling: A case study using Bayesian total error analysis, Water Resour. Res., 45, W00B14, doi:10.1029/2008WR006825.

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