* P and L denote Page and Line, respectively.

Reviewer #4:

The manuscript applies three copula functions for bias correction of ECMWF daily air temperature data. The topic is interesting however the paper show several drawbacks. I agree with all the comments already underlined by the other reviewers and in addition I would to emphasize the following ones:

- The paper is general could be clearer above all concerning the data description.
  - P11, L20, this section is revised.

- I did not fully understand the data set included in the application since I am surprised by the sample dimension that is poor either in the calibration and in the validation.
  1- We want to emphasise on the problem definition as:
    - P1, L23-24, the problem is defined as: Weather stations are often sparse and usually located at irregular positions. If their data are used for crop growth simulations, then their results at unvisited locations are likely to be uncertain.
    - P2, L4-L8, further explanations are added as: Due to the coarse spatial resolution of weather forecasted gridded data, there is an apparent mismatch between measurements obtained from weather stations and weather forecast data. In this study, unvisited locations are grid points which do not contain an observation due to the relatively low number of weather stations in the study area. In order to obtain unbiased values, a bias correction method should be applied for these grid points before using the weather forecast data.
    - P11, L25-29: One of the objectives of this project is to produce daily air temperature map from point measurements to be used in crop growth simulations for assessing near-real time crop and irrigation water requirement. Considering the importance of June in the crop calendar of the study area which is the end of winter crops and beginning of summer crops especially maize, we applied the proposed methods to available dataset of this month.
    - P12, L10-13: To analyse the temporal variability of dependence structure, which is modelled by copula's parameter, the proposed bias correction methods are applied separately at each day in June 2014. Due to lack of availability of daily air temperature measurements in 2014 over the study area, copulas and marginal distributions are fitted to the eleven years series of the daily air temperature data.
    - P4, L29-32 and P14, L18-19, goodness of fit test is done for copulas and p.values are listed in Table 4.

- In copula application it is important that data would be not auto-correlated. This issue is not considered in the paper and most probably daily temperature are, or could be, autocorrelated in the proposed procedure.
  - P2, L22-L26, further explanations are added about removing autocorrelation in time series: A bias correction method proposed by Laux et al. (2011) employed bivariate conditional copulas to model dependence between the daily precipitation time series retrieved from a regional climate model and observations at three locations where data is available. In their method, however, a bivariate copula is fitted to daily time series at one location, ignoring the temporal variability of copula parameter as well as spatial dependency. In addition, the fitting is required to remove autocorrelation and heteroscedasticity which may exist in the time series (Laux et al. 2011).
  - P3, L2-11, the aim of this study is further explained as: In this study, we aim for:
    - estimating different conditional quantiles at different unvisited locations accounting for the temporal variability of the dependence structure.
    - evaluating these methods' ability to predict the spatial variability of the bias-corrected daily air temperature at unvisited locations.
    - comparing the proposed methods with available bias correction methods, which are quantile mapping, expectation predictor and single quantile predictor.
    - providing a review of these methods for bias correction of the daily air temperature data when a relatively low number of observations are available.