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Comment on hess-2021-599

Anonymous Referee #1

Referee comment on "Comparison between canonical vine copulas and a meta-Gaussian model for forecasting agricultural drought over China" by Haijiang Wu et al., Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2021-599-RC1>, 2021

Dear Editor

First of all, I would like to thank for inviting me to review the manuscript entitled "Model Comparisons between Canonical Vine Copulas and Meta-Gaussian for Agricultural Drought Forecasting over China" for possible publication in HESS. I return comments on the above-referenced manuscript. This manuscript has organized pretty well and can be accepted for publication in this journal if the authors carefully revised the following issues. The topic falls into the scope of HESS.

The authors shall do more work to present the topic well so that it is easy for the readers to follow. For example, it is mentioned in lines 95-97, "The objective of this study therefore was to compare the forecast ability of agricultural drought in August of every year in the period 1961–2018 between canonical vine copulas (i.e., 3C-vine model) and MG model under three-dimensional scenario." Why did you just choose August? Why does the study examine the performance of these models? What are the problems, and how these models addresses the problems?

Data are not described, for example what are the data characteristics, what are the data that are used for the estimations and validations.

To better understand, it is better to provide a flow chart of proposed method at the end of the materials and methods section.

The internal copulas of the C-vine not discussed in the first tree. Also, evaluation statistics

on tree structure selection are not clear.

Last but not least, in Figure 4, the NSE values are between -0.2 to 0.2, is this acceptable?