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Natural Hazards and Earth System Sciences

We appreciate the comments provided by the reviewer and the editor for improving the quality of the last version of the manuscript. The following are point-by-point answers to the comments in blue color:

Comments from Referee #2 (RC2):

1.The corrected log-likelihood function, Eqn. (8), in your revised manuscript is slightly different from the original version in the BMA literature (Raftery et al., 2005), in which the prediction errors are assumed to be independent over time. Even if the final BMA estimates may be not significantly different due to the different forms of likelihood functions, it would be better to justify the assumption you have made and check the results again.

Response: Thank you for drawing attention to this distinction. We acknowledge that both versions of likelihood functions have been extensively employed in the literature. As correctly pointed out by the reviewer, the original version, proposed by Raftery et al. (Dong et al., 2013; Liu & Merwade, 2018; Parrish et al., 2012), assumes independent probability functions over time, resulting in different weights estimated at each time step. However, the version implemented by us assigns a single weight to the entire simulation period (Abbaszadeh et al., 2022; Duan et al., 2007; He et al., 2018; Madadgar & Moradkhani, 2014).

In response to the reviewer's suggestion, we investigated the sensitivity of our results to both likelihood functions. The table below illustrates the performance metrics of Cop-BMA results using both versions of the likelihood function. As evident, the performance does not significantly vary between these two versions. Consequently, we have opted to retain this implementation, as it yields results comparable to the original version and aligns with the broader usage in the literature.

Metric	Averaged value	
	Eq. in article	Raftery et al.
NSE	0.8585	0.8581
KGE	0.8527	0.8520
RMSE	0.5617m	0.5696m
MBE	0.049m	0.0535m

2. There might be a typo in Eqn. (3) in your revised manuscript. The right parentheses of "P(x_1" in the middle term is missing.
Response: The equation was corrected.

Comments from Editor:

I kindly ask you to increase the font size of the labels in Figures 3, 4, 6 and 8. Figure 9 is missing a scale bar and a north arrow or grid.

Response: Figures 3, 4, 6 and 8 were modified by increasing the font size of labels. Figure 9 was modified by adding a north arrow and a scale bar to be consistent with other maps in the manuscript.

References

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Sincerely,

Francisco J. Gomez, Corresponding Author
Center for Complex Hydrosystems Research (CCHR)
Department of Civil, Construction and Environmental Engineering
The University of Alabama