Reply on AC4

Anonymous Referee #2

Referee comment on "Seasonal forecasting of lake water quality and algal bloom risk using a continuous Gaussian Bayesian network" by Leah A. Jackson-Blake et al., Hydrol. Earth Syst. Sci. Discuss., https://doi.org/10.5194/hess-2021-621-RC5, 2022

Thank you for the additional notes. I think my last response was a bit hasty. At the same time, it's somewhat unclear why certain features (covariates) are based on observed data for the period of prediction (which can't be known at the time of forecast) and other features are based on forecasts of those features. However, I don't think this is a major sticking point, as the authors can further clarify these issues and their motivation in the manuscript.

I appreciate the authors exploring the credible intervals issue, and I think the proposed demonstration of an example forecast may be helpful. Given that that the GBN shares many of the same features as an MLR (linear relationships, Gaussian error distribution (usually), probabilistic predictions of continuous variables), it would be nice to clarify the potential advantages and disadvantages of the GBN approach. The authors provide some comparison with the discrete BN (Section 4.2), so perhaps something along these lines and with connections to your particular case study.