

Hydrol. Earth Syst. Sci. Discuss., author comment AC1  
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## Reply on CC1

Thomas Lees et al.

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Author comment on "Hydrological concept formation inside long short-term memory (LSTM) networks" by Thomas Lees et al., Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2021-566-AC1>, 2022

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We thank John Ding for his comments on our manuscript. Ultimately, our study was not focused on altering the LSTM architecture but rather on how we can best interpret the architecture that has already been shown to exhibit state of the art performance for rainfall runoff modelling. Other work has explored alterations to the LSTM architecture, and of particular interest is the Mass Conserving LSTM (Hoedt et al 2021) that some of the authors of this paper were involved in. That being said, the lead author, Thomas Lees, would be more than happy to discuss this further if you would like to reach out to him and organise a time to discuss. Thank you again for your interest in our work.

Hoedt, Pieter-Jan, et al. "MC-LSTM: Mass-Conserving LSTM." arXiv preprint arXiv:2101.05186 (2021).