Reply to Comments

JOURNAL TITLE: **Hydrology and Earth System Sciences**
MANUSCRIPT TITLE: **Incremental learning for rainfall-runoff simulation on deep recurrent neural networks**
MANUSCRIPT-NUMBER: **hess-2024-56**

Dear Editors and Reviewers:

Thank you for your letter and for the reviewers' comments concerning our manuscript. Those comments are all valuable and very helpful for revising and improving our paper, as well as the important guiding significance to our researches. We have studied comments carefully and have made corresponding corrections which we hope meet with approval. Revised portions are highlighted in the paper using the Microsoft Word's "track changes" function. A "clean" version that has accepted all the changes in "track changes" is also provided. A summary of the major changes and item-by-item response to the reviewers' comments are as flowing:

Response to John Ding:

Comment: ***I've read with curiosity the contribution from Wuhan, PRC, on application of LSTMs on the Yangtze and Han Rivers using an NSE as a performance metric, Chen et al. (2024). Their Equation 22 is called the NSE, Nash-Sutcliffe efficiency coefficient, but I can't find a reference in the manuscript. Equation 22 is same as Equation 1 in Bassi et al. (2024, and CC1 therein). Both are of same form as the coefficient of determination, R^2, in Ding (1974, Equations 40, 47) and the NDE (Nash-Ding efficiency) in Duc and Sawada (2023, Equation 3).***

Is Equation 22 an NSE in name, but an NDE in fact

Response: Thank you for your suggession. We have added the related references of the metrics. And in the references the NSE is of same form as the coefficient of determination exactly.

Special thanks for your insightful comments and helpful suggestions on our work. We really appreciate it for it helps us a lot in improving the quality of our manuscript. We have tried our best to make revisions accordingly to improve the manuscript. We hope that the revisions could meet with approval.

Yours,
Sincerely,
Changjiang Xiao