

## ***Interactive comment on “The hydrodynamic and environmental characteristics of tributary bay influenced by backwater jacking and intrusion of main reservoir” by Xintong Li et al.***

### **Anonymous Referee #1**

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The manuscript presents how the backwater jacking and intrusion of the main reservoir influence the hydrodynamic and water environment characteristics of the tributary bay. To my knowledge I, this is likely the first time the main reservoir’s backwater jacking and intrusion question is explained clearly. The different effects in different areas of the tributary bay are found. The results can provide guidance for water environment protection in the tributary bays. There are some minor comments listed as below:

1) Line 59 - Line 61: “A tributary bay is always influenced by backwater jacking and intrusion with the rise of the water level of the main reservoir because such changes induce changes in the hydrodynamic conditions in the tributary bay”. “the rise of the

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water level” is not specific, “fluctuation” is better. And any relevant references for this statement?

2) Introduction section: Please explain what is backwater jacking and what is intrusion, which can make the paper more comprehensible to readers.

3) Line 61- Line 63, Line 64 - Line 66, and Line 91- Line 94: The statements need some more references to support.

4) Line 101- Line 102: Please add the necessity of the study area selection and explain why you select Tangxi River but not other tributaries.

5) Line 220 - Line 221: Please specify the location of the point pollution load.

6) Fig. 4.: It is hard to understand the meaning of fig.4., please add the legend or explain the meaning of the lines in your figure.

7) Line 417 - Line 418: “There was an obvious quality concentration boundary in the tributary bay, which was basically consistent with the regional boundary of the flow field”. Are the boundaries of each month in Fig. 9. - Fig. 12. same to the boundaries of each month in Fig. 2. - Fig. 5.? If not, please make a comparison.

8) Fig. 16.: Title of horizontal axis in fig.16. is “. . . Yangtze River junction”, which is not consistent with the previous description “. . .confluence”.

9) What are the degradation coefficients of COD, HN3-N, TP and TN?

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