

*Review of*  
**“Hydrodynamic and environmental characteristics of a tributary bay influenced  
by backwater jacking and intrusions from a main reservoir”**

*by X. Li et al.*

This paper has been significantly improved. A few things need to be clarified and corrected so I recommend minor revision.

**Major comments**

1. Lines 59–60. I don’t understand what ‘the other side is? Do you mean the velocity is higher on the upstream side of the confluence than it is on the downstream side?
2. Line 124. Is the annual flow 14300 m<sup>3</sup>/s at the mouth of the Yangtze of at the location of the Three Gorges Dam?
3. Line 142. “... by coupling the governing equations ...”.
4. Line 143. “The computational domain was divided ...”
5. Lines 152–167. According to figure 2 it appears  $\alpha = 0$  so the  $gB \sin \alpha$  term in equation (2) should be removed and  $\cos \alpha$  should be replaced by 1 in equation (3). On lines 159 it is stated that  $z$  is the vertical elevation which, according to Figure 7 increases upward, so the right hand side of (3) should be  $-g$ . Shouldn’t the integrals in (4) be from  $h$  to  $\eta$  rather than from  $\eta$  to  $h$ ?
6. Equation (6). The units for  $T_w$  should be given.
7. Line 195. ‘... we did not distinguish the heating’ does not make sense. Some shortwave reaches the bottom. The model must do something with it. From what has been said it sounds like that energy is simply removed. It is not absorbed by the bottom nor is it reflected back into the water column. This should be made clear.
8. Page 11. Is the temperature RMSE for surface water temperature or does it include temperatures at several depths. Similarly for the other quantities.
9. Figure 3. What is plotted here. Surface values? Depth averaged values?
10. Figure 3(b). The meaning of ‘Wind direction (E)’ is not clear. The direction of the arrows needs to be better explained.
11. Line 295. “Periods of intrusions occurring in other ....”
12. Line 296. “... concentrated during low ... operation and impoundment periods”
13. Lines 301–303. The meaning of this sentence is unclear.

14. Line 326 and below. What is meant by 'one or two flow circulation patterns'. There is one flow circulation pattern in the tributary bay. There can't be two flow circulation patterns at the same time. Do you mean something like 'forming one of two dominant flow circulation patterns'? What are the 'two large counterclockwise circulations' mentions on lines 331–332?
15. Line 349. What is meant by 'flowed through the surface layer'. Flowed along the surface layer?
16. Line 448. Delete 'basically'. What does that word add?
17. Lines 572–574. The meaning of this sentence is not clear.
18. Lines 590–593. The meaning of this sentence is not clear.