

Interactive comment on “A numerical study of tsunami wave run-up and impact on coastal cliffs using a CIP-based model” by Xizeng Zhao et al.

Anonymous Referee #2

Received and published: 2 March 2017

This paper has presented some interesting results of tsunami wave run-up and impact on the coastal cliffs, which provide a valuable contribution to prevent the damage caused by tsunamis. The content is clear, concise and well-presented. However, the text needs to be significantly improved before consideration for publication and these comments are outlined below.

1. Please provide a more detailed description of the numerical CIP method and THINC/SW scheme in section 2.
2. In section 3.2, the authors should describe the method they used to define and create the solitary wave.
3. Please ensure that all figures appear on the top of each page.

C1

4. The English expression of the whole text needs to be improved.
5. Please ensure on your next submission that the line numbers appear throughout the whole document rather than showing just 5, 10, 15, 20 and 25.
6. Please make sure that Fig.1 and Fig. 2 are presented clearly.
7. Please enlarge the font in Figures 1, 2, 4 and 6 so that these figures are readable.
8. In Page 5, Line 2, “The angles of slopes are $\tan\theta_1=25/17$, $\tan\theta_2=1/15$, $\tan\theta_3=1/30$ ” is a wrong expression.
9. Please also check the description in Page 5, Line 13 “The angles of slopes. . .”.
10. In Page 5, Line 15, the sentence should be “Two kinds of cliff, normal cliff of $\theta_4 = 80.02^\circ$ degree and toe-eroded cliff $\theta_4 = 91.91^\circ$ are considered.”
11. In Page 5, Line 4, “Solitary waves are” should be “Solitary wave is”.
12. In the whole text, the authors can consider to use the expression of “Tank 1” and “Tank 2” not “1# tank and 2#tank”.
13. In Page 6, Line 18, please improve the expression of the sentence “Then, it impacts and runs upon the cliff and falls back to the beach.”.
14. In Page 7, Line 6, “However, for the” should be “However, as the”.
15. In Page 7, Line 19, “As for Fig. 4(e) and (f)” should be “As for Figs. 4(e) and (f)”.
16. In Page 8, Lines 3-4, the velocity of the water particle cannot be faster, it should be higher.
17. In Page 9, Line 4, “Figs. 5(b), (d), (f)” should be “Figs. 5(b), (d) and (f)”, “Figs. 5(a), (c), (e)” should be “Figs. 5(a), (c) and (e)”.
18. In Page 10, Line 2, “ $x=0\text{m}$, 0.1m , 0.2m , 0.3m , 0.4m ” should be “ $x=0\text{m}$, 0.1m , 0.2m , 0.3m and 0.4m ”.

C2

19. In Page 10, Lines 4-5, there is no number after the word of "Figs".

20. Please complete and improve the introduction and literature review with more recent journal publications.

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