Natural Hazards and Earth System Sciences Discussions

Nat. Hazards Earth Syst. Sci. Discuss., author comment AC3
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Reply on RC2

Takenori Shimozono

Author comment on "Tsunami propagation kernel and its applications" by Takenori Shimozono, Nat. Hazards Earth Syst. Sci. Discuss., https://doi.org/10.5194/nhess-2021-30-AC3, 2021

In my previous reply, I forgot to respond to a few minor comments by Reviewer #2. Here I would like to add my responses to them.

Comment: I think that the expressions for tpm in the equation (24) are simply the two branches of some specific characteristic curves in the (x; t)-plane. Indeed they may be cast in the following compact form: x = [t -2 -T (m-1)]^2 ; where T = 4 is the time "period" that takes a signal to travel back and forth in the fluid region.

Reply: Thank you for the comment. I was not aware of the way of interpretation. I will add this viewpoint to the revised manuscript.

Comments: Equation (19). Here the author should point out that the damping factor has an upper limit. Specifically, it should be alpha < c1 where c1 \approx 2.405 is the first real zero of the Bessel function J_0.

Reply: I agree with the reviewer and will explain it in the revised manuscript.