

Author's response

Dear Dr. Huthnance,

Thank you very much for your careful reading of our revised manuscript and for your helpful technical comments. We have revised the manuscript accordingly and carefully checked the Supplement so that the final published version is as clear and self-contained as possible.

Please find below our point-by-point responses to your detailed comments.

Response to the Editor's detailed comments

1. Line 36. Omit "in". Better if "year-round" is explained.

Thank you. We removed the unnecessary "in" and revised the wording to clarify the intended meaning of "year-round" in context.

2. Figure 2 caption. "(Figure 2)" can be omitted.

Thank you. We removed the redundant "(Figure 2)" from the caption.

3. Line 90. Please insert ":" between $\eta_{\text{obs}}(t)$ and $(\zeta_{\text{surge}}(t))$.

Thank you. We inserted the colon as suggested.

4. Lines 123 and 139. I don't think "the numerical simulations (are) described in" Section 2.1 or 2.2. Please use a separate sentence to refer to sections 2.3.2 to 2.3.4.

Thank you. We revised this part so that the observational data and selected events are described in Sections 2.1 and 2.2, while the numerical simulation framework and model setups are referred to separately in Sections 2.3.2 to 2.3.4.

5. Line 148. I think the five σ values imply four sigma layers between the values. Please also check line 149 as you might mean "2 to 6 layers in the vertical" if 3 and 7 values of σ were used.

Thank you. We corrected the wording accordingly. The manuscript now clearly states that five σ -levels correspond to four sigma layers, and that the sensitivity tests used 2 to 6 vertical layers, corresponding to 3 to 7 σ -levels.

6. Figure 3. Latitude and Longitude coordinates still missing.

Thank you. We addressed this point in two ways. First, we revised Figure 1 so that the geographical reference to the computational domain is clearer, with latitude and longitude coordinates explicitly shown there. Second, in Figure 3, we added the scale information and clarified in the caption that the computational domain corresponds to the yellow box shown in Figure 1, where the latitude and longitude coordinates are provided.

7. Line 221. Better “lower” → “less”.

Thank you. We replaced “lower” with “less”.

8. Lines 227–228. This sentence might be easier to read if the “,” after “direction” and “transport” were replaced by “–”.

Thank you. We revised the punctuation in this sentence to improve readability.

9. Lines 228–231. This looks like an objective which should appear in the Introduction.

Thank you. We agree, and we added this objective more clearly in the Introduction.

10. Line 241. “timing” → “time”.

Thank you. We revised this wording accordingly.

11. Lines 235–260. Please refer to Supplementary figures 2, 3, 4 where appropriate.

Thank you. We revised the main text to refer to the relevant Supplementary figures where appropriate. In the final Supplement, the previously submitted Supplementary Figs. 1, 2, and 5 were updated and included as Figs. S1, S2, and S3, respectively. The previously submitted Supplementary Figs. 3 and 4 were not included separately in the final Supplement because their contents were essentially duplicated by figures retained in the main manuscript.

12. Line 287. The added meaning given by “, indicating . . . reproducibility” is not clear given already “with high precision” in the previous line.

Thank you. We revised this sentence to remove the unclear added phrase and make the statement more direct.

13. Lines 327–335 (?). Please refer to Supplementary figure 5.

Thank you. We added the corresponding Supplementary reference in this part of the manuscript. In the revised Supplement, the previously submitted Supplementary Fig. 5 has been included in updated form as Fig. S3.

14. Line 332. “in reality” can be omitted (c.f. line 331).

Thank you. We omitted “in reality” as suggested.

15. Lines 356 to 361. Please refer to Supplementary figure 1.

Thank you. We added a reference to Supplementary Fig. S1 in this part of the manuscript. In the revised Supplement, the previously submitted Supplementary Fig. 1 has been updated and included as Fig. S1.

16. Lines 386–388. “through additional idealized simulations” might better appear after “subsection,”

Thank you. We revised this sentence for readability following your suggestion.

17. Figure 20. Centre panel heading “Base – No Korean Peninsula” with a positive anomaly difference in Tsushima Strait suggests that the Korean Peninsula enhances (not “suppresses”) the anomaly. Please check.

Thank you for pointing this out. We checked the sign convention and revised the figure labeling/caption so that the anomaly difference is described consistently. The revised caption now explicitly states the definition of the anomaly difference and clarifies that positive values indicate larger anomalies in the case without the Korean Peninsula. This makes the interpretation consistent with the discussion in the text, namely that the presence of the Korean Peninsula suppresses the storm surge amplitude.

19. Lines 491 and 492. You could omit “velocity”. Velocity means strength and direction; here you only comment on strength, implied already by “strengthens” and “weakening”. Likewise line 495.

Thank you. We removed “velocity” where only the strength of the flow was being discussed, and revised the wording at all corresponding locations.

20. References. Please put these in alphabetical order of the family name that comes first.

Thank you. We reordered the references alphabetically by the first family name.

Once again, we sincerely thank you for your careful and constructive comments. We believe that these revisions have improved the clarity and consistency of the manuscript and Supplement.

We are also especially grateful for your thorough and attentive editorial handling of our manuscript throughout this process.

Yours sincerely,
Yoshihiko Ide
on behalf of all authors