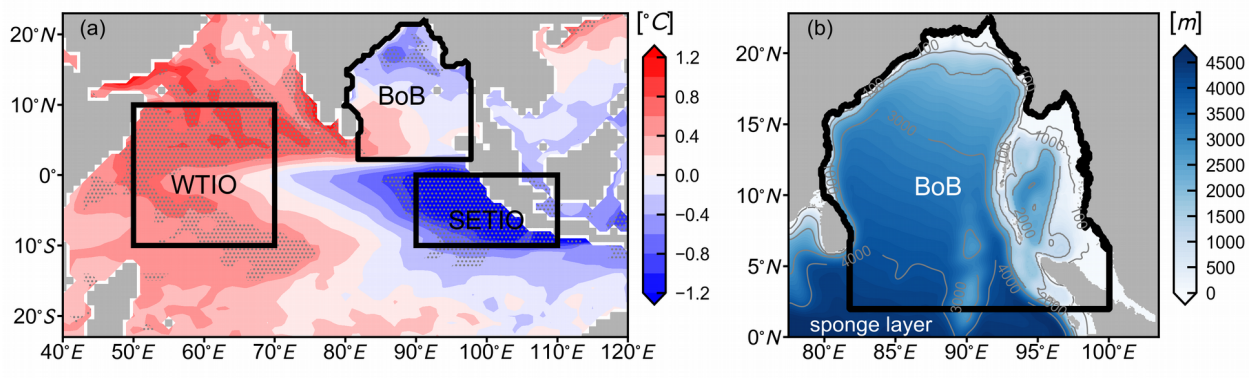
We thank the reviewer for the careful reading of the manuscript and the constructive comments. Please find below our point-by-point replies:

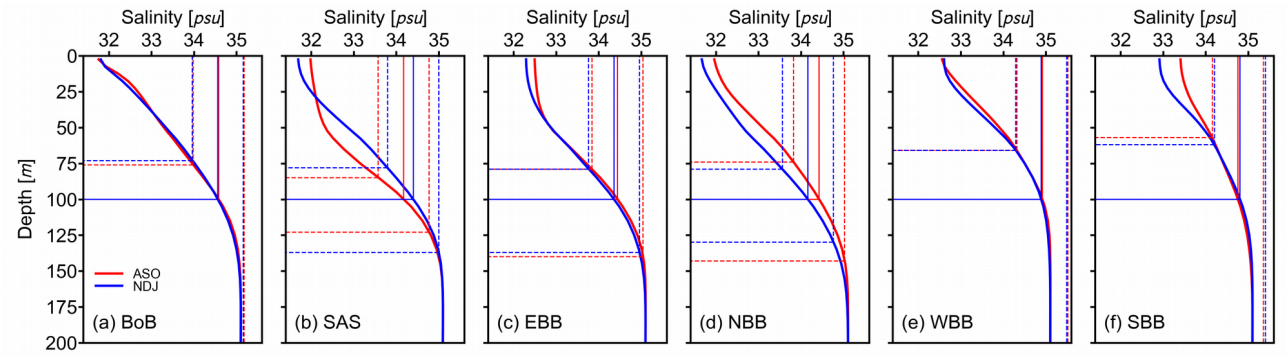
Comment 1:
The paper should also start presenting the bathymetry of the regions under discussion.

Reply 1:
We plan to use the new figure shown below to replace Fig. 1. The new Figure 1b shows the model bathymetry, used in our simulation. The region of the BoB, which we defined for all BoB-related calculations, and the sponge layer are also marked in this new Figure 1b. The sponge layer helps to stabilize the model. We will discuss this latter issue in the updated manuscript.



Comment 2:
If you discuss salinity anomaly in the Bay of Bengal then you should also present the typical vertical salinity (and temperature) stratification in the region. The salinity anomalies discussed seem to be very, very small compared with vertical gradients in the region. What would be the equivalent vertical displacement yielding the same salinity anomalies?

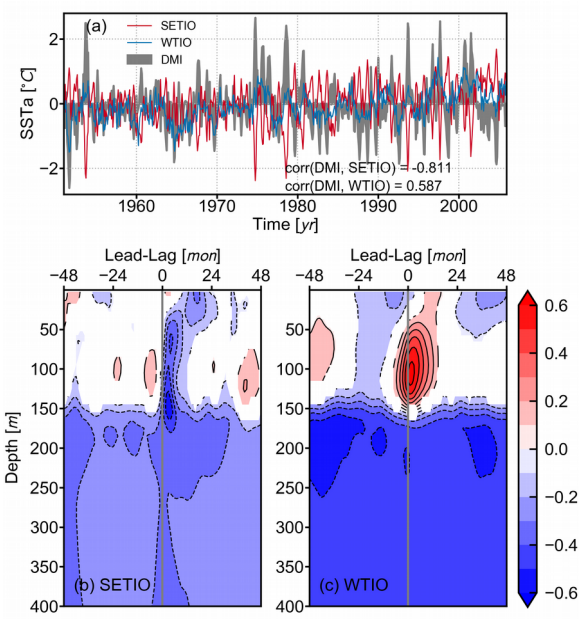
Reply 2:
Thanks for this very constructive comment, which will improve our manuscript significantly. We plan to add a new figure (given below) showing the vertical salinity stratification in the seasons ASO and NDJ for entire BoB and for the five sub-regions, together with a new paragraph explaining this new figure. Dashed lines indicate the equivalent vertical displacement yielding a 0.6 psu salinity anomaly. Obviously, the vertical salinity gradient close to the surface is relatively large, especially in the northern bay, due to the fact that heavy precipitation and strong river discharge freshens the surface water. This freshening is a local monsoon dominated seasonal feature, which mainly affects the surface and upper ocean. However, at a depth of 100 m, as this new figure indicates, a 0.6 psu salinity anomaly (suggested in Fig.10 & 12) is not negligible. In sub-regions which are significantly affected by coastal Kelvin waves and associated Rossby waves, such as SAS, EBB, and NBB, the equivalent vertical displacement of a positive 0.6 psu anomaly reaches about 20-50 m. By this means, this new figure also gives a clear indication that the wave, which we investigate in our study have a significant influence on the structure of the water column.



Comment 3:
The DMI has a western and an eastern SST signal. What is the influence of the western SST signal on your results? Why didn't you only use the eastern SST anomaly for your correlation analysis? I presume you'd even get a better correlation then. Please test this.

Reply 3:
We tested this as proposed; the main results are shown below.

As one can see in the figure shown below, the correlation is not getting better, when we only use the southeastern SSTa (SETIO). This is in agreement with our physical understanding that the gradient between the two anomalies is responsible for the strength of the Kelvin wave signal.



Comment 4:
It is no surprise at all to see that coastal Kelvin waves and Rossby waves propagate through the oceans. I could think of 1000s of similar studies, just focussing on different regions. To come to the point. Why makes the salinity anomalies in the Bay of Bengal significant? Do these waves play any role in the biology of the regions? Do they create any other climate feedback mechanism? If so, please try to convince the reader of the great significance of your work.

Reply 4:
In our current manuscript (the pre-print version), we tried to stress the importance of our work. In lines 42-46 and lines 334-344, we already discussed the importance of subsurface salinity variability with respect to the barrier layer, the stratification evolution, currents, eddies, the near-surface state, and air-sea energy transfer. Apparently, our current discussions need to be more

convincing. We will stronger focus on the unique topographic configuration of the BoB, which is more susceptible to signals from the equator through Kelvin waves and Rossby waves than any other ocean region. Another issue, which will be discussed is the relatively large IOD-related subsurface salinity anomalies suggested by our results.

There is no biological module involved in our simulation, so we are not able to discuss biological processes on the basis of our HAMSOM result. However, as the IOD-related subsurface salinity anomalies and they equivalent vertical displacement suggest, these waves are expected to play an important role for the biology of the BoB. We will discuss this issue in section 5 to describe the importance of our work from the biological perspective.

As we stated in line 42-43, the subsurface salinity is of great importance for determining the ocean barrier layer and ocean mixed layer depth. As our results show, the BoB subsurface salinity is significantly modulated by the IOD through the Kelvin and Rossby waves. Therefore, it is expected that these wave also affect the air-sea exchange processes in the BoB, which in turn also influence the remote ocean feedback to the atmosphere. We will also discuss this aspect in the section 5.

Comment 5:
So far, only a few pIOD events have been recorded. Does this limited number of events have any implications on the statistics presented in the paper?

Reply 5:
Statistically, the size of the pIOD or nIOD sample, which is five, and the size of the climatology sample, which is thirty, are sufficient to test the hypothesis that these two populations have equal means using the Welch's t-test. Furthermore, as one can see from Figs. 10 and 12, the patterns of statistically significant anomalies are consistent with the propagation features of coastal Kelvin waves and associated Rossby waves. So, in this study, the limited number of events does not affect our conclusions. We will provide more information about this issue and the Welch's t-test in the updated manuscript.

Comment 6:
Why does HAMSOM create such strong NDJ current components of V at 80 degE and U at 5 degN? These are the at the boundaries. Is there any problem with the boundary conditions?

Reply 6:
Actually, as nearly all regional models, also in HAMSOM we experienced problems at the open boundaries. Therefore we implemented a sponge layer along the southern open boundary, which was used to damp disturbances arising from inconsistencies within the prescribed boundary condition extracted from the MPI-EMS-MR. Therefore, we have excluded the sponge layer area from our analysis. Since the HAMSOM model results show a reasonable agreement with observed and already known features of the BOB on the large scale, we assume that these problems along the open boundary are not able to significantly affect our region of interest.

Comment 7:
If the model domain extends to the equator, please do also show the salinity distributions extending to the equator.

Reply 7:
Yes, the model domain extends to the equator. But as the new Fig. 1b indicates, we defined a sponge layer along the open lateral boundaries. Therefore, we decided to only show the results of the BoB domain indicated in Fig. 1b. This issue will be explain in the updated manuscript.