Response Letter to the RC1

To further improve the manuscript presentation, this reviewer gives the following suggestions.

Response: We thank the reviewer for carefully reading and providing detailed comments to improve the manuscript. We have revised the paper accordingly and the following are point-to-point responses for the valuable comments.

1. Change the title to "Statistical features of spatiotemporal distributions of internal waves in the northern South China Sea derived from MODIS imagery by deep learning approach".

Response: We have changed the title as advised.

2. Change the title of Section 3 to "Signature extraction and validation".

Response: We have changed the title of Section 3 as advised.

3. Change the title of Section 4 to "Statistical analysis".

Response: We have changed the title of Section 3 as advised.

4. Change the title of Sub-section 4.3 to "IW silence regions". It is not "new IW findings". See Figure 13a in Zhang et al., 2023, IEEE TGRS.

Response: We agree the silence regions are not new findings. We have revised the title.

5. Change the caption of Figure 5 to "Statistical histograms of IW pixel number vs the water depth for (a) the whole northern SCS (orange) and (b-e) four regions as shown in Figure 4 (blue)".

Response: We have changed the figure caption as suggested.

6. Change the caption of Figure 6 to "Statistical histograms of monthly distributions of IW days for (a) the whole northern SCS (orange) and (b-e) four regions (blue)".

Response: We have changed the figure caption as suggested.

7. Change the caption of Figure 7 to "Statistical histograms of IW pixel number vs the lunar day for (a) the whole northern SCS (orange) and (b-e) four regions (blue)".

Response: We have changed the figure caption as suggested.

8. Change the caption of Figure 8 to "IW silence regions (black arrows) in (a) Region 2 and Region 1 derived from superimposed IW location".

Response: We have changed the figure caption as suggested.

9. Wording and writing need further improvement. Take a sentence from L189 to L191 as an example.

As shown in Figure 4, ~~We classified~~ we divided the detected IW locations into four regions 1 - 4, ~~according to the spatial locations. Region 1 includes~~ which covers the area ~~between~~ from 112.5°E to ~~-~~114.2°E and from 18.5°N ~~to~~-20.9°N~~.; Region 2 includes the area between~~ from 114.2°E ~~to~~-118.1°E and ~~from~~19.5°N ~~to~~-22.2°N~~.; Region 3 includes the area between~~ from 118.1°E ~~to~~-120.0°E and from 22.0°N ~~to~~-2~~2~~3.~~8~~0°N~~.; Region 4 includes the area between~~ and from 118.1°E ~~to~~-120.5°E and from 19.5°N ~~to~~ -22.0°N, respectively.

Response: We have fixed the sentence and improved the overall writing in the revised paper using Grammarly and other language polishing software.