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Supporting Information (Figures) for

**Seasonal Evolution of Oceanic Upper Layer Processes in the Northern Bay of Bengal following a Single Argo Float**

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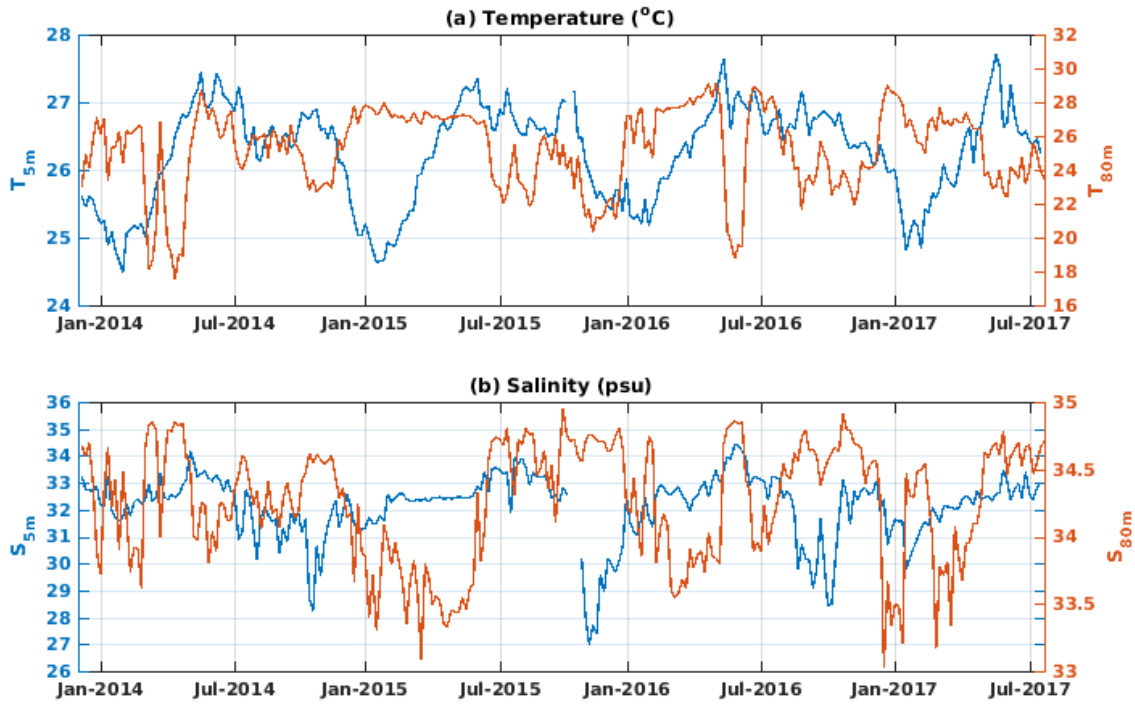
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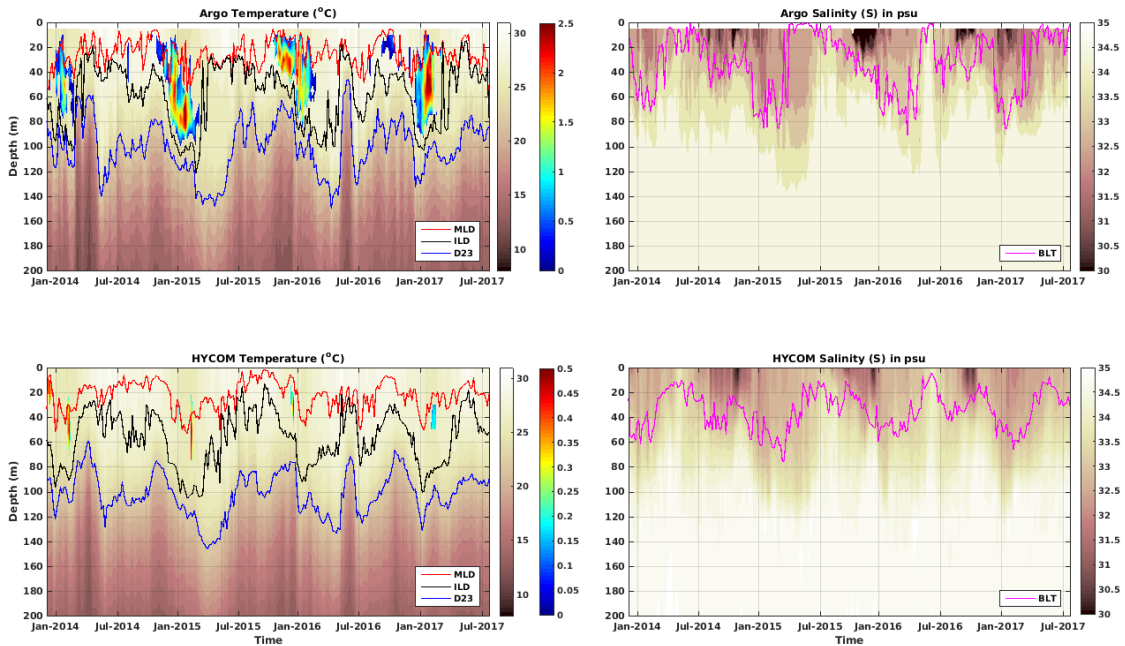
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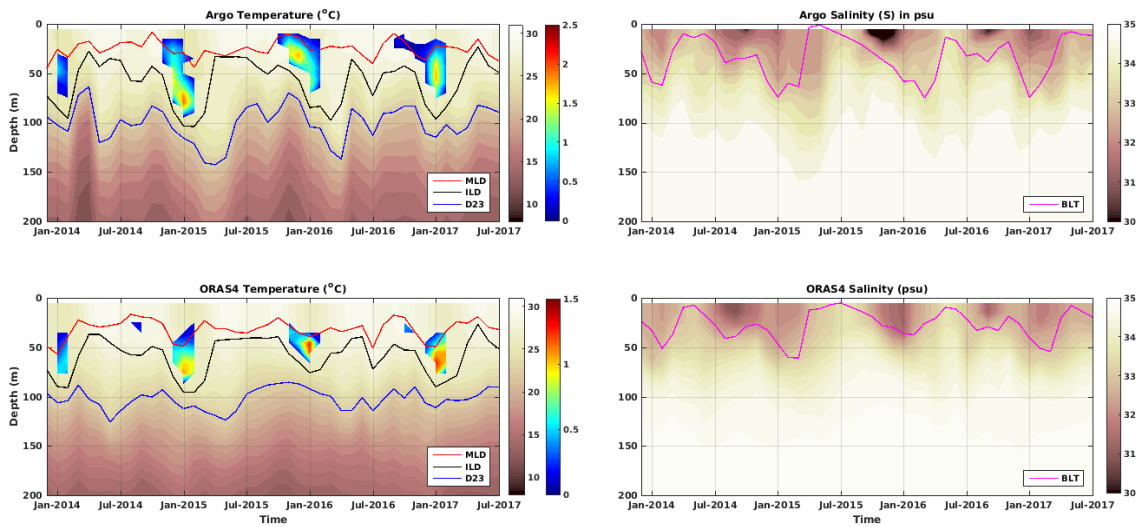
**Figure S1 to S5**



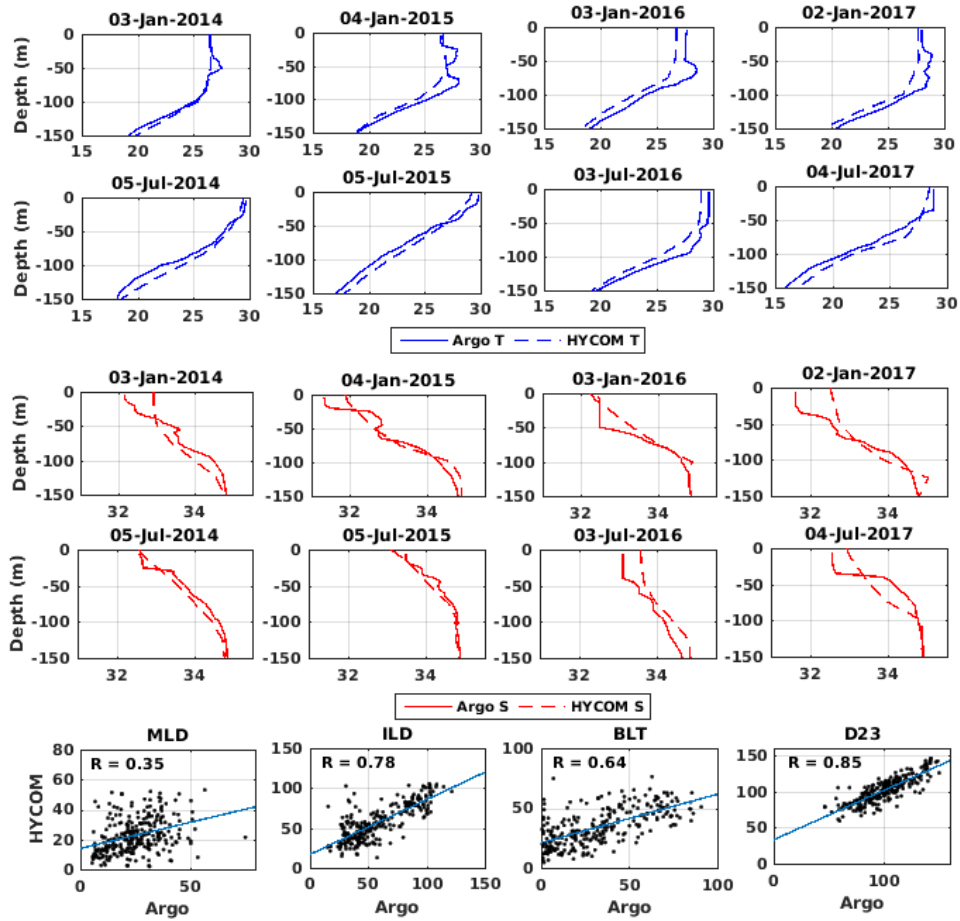
**Figure S1.** Time series of the a) temperature and b) salinity at 5 m (blue line) and 80 m (orange line) from Argo float (WMO ID: 5904302). The y-axis on the left (right) side indicate the range of the 5 m (80 m) temperature (a) and salinity (b).



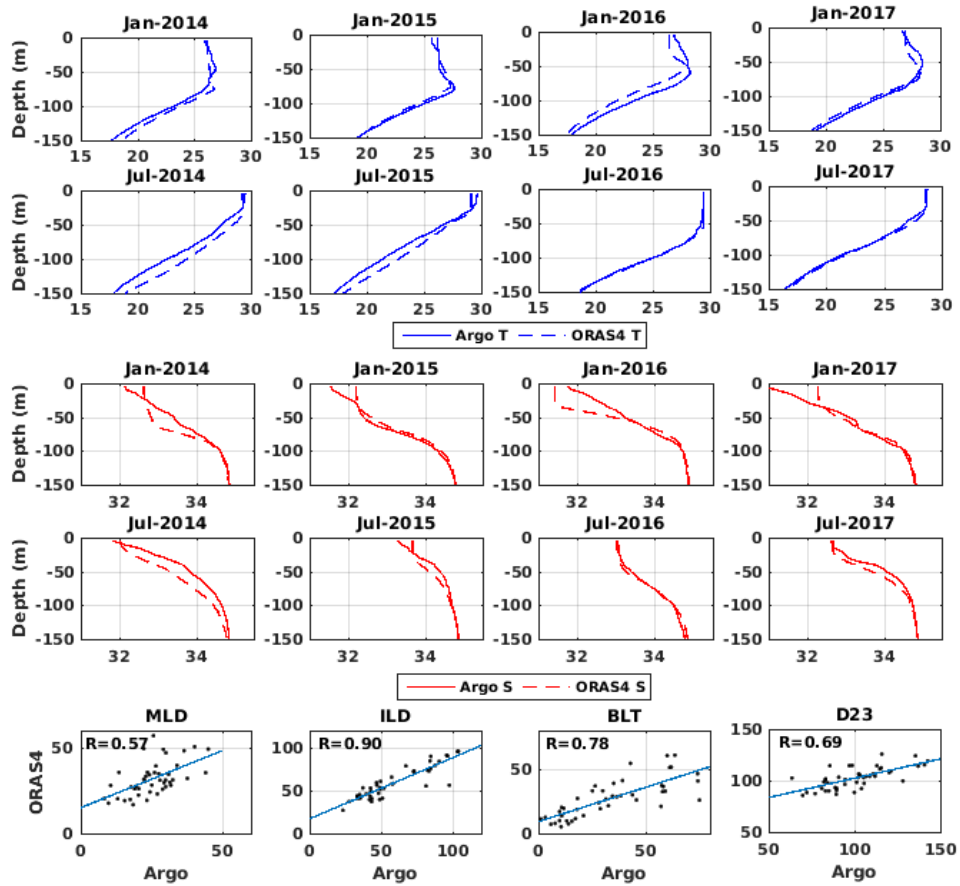
**Figure S2:** Comparison of HYCOM with Argo. Time depth section of temperature (left) and salinity (right) from Argo (top) and HYCOM (below) along the Argo float trajectory. Temperature inversion are shown using jet colormap with temperature (left). Time series of MLD (red line), (ILD, black line) and 23°C isotherms (D23, blue line) are superimposed on temperature (left). Time series of BLT (magenta line) are shown with salinity (right). The ticks along the x-axis represent the 1st day of the given month.



**Figure S3:** Same as Figure S2 but for Argo and ORS4 (both are monthly fields).



**Figure S4:** Comparisons of temperature profiles of HYCOM (dashed) with Argo (solid) in January (first row) and in July (second row). Third and Fourth rows are similar to first and second rows but for salinity. Correlations of MLD, ILD, BLT and D23 of HYCOM are shown from left to right in the fifth row against Argo observations. Note the missing temperature inversion in HYCOM simulation during January (top row) of all four years.



**Figure S5:** Same as Figure S4, but for ORAS4. Note that on a monthly scale, ORAS4 is able to reproduce some of the observed inversion (top row) during January due to its assimilative framework in reanalysis.