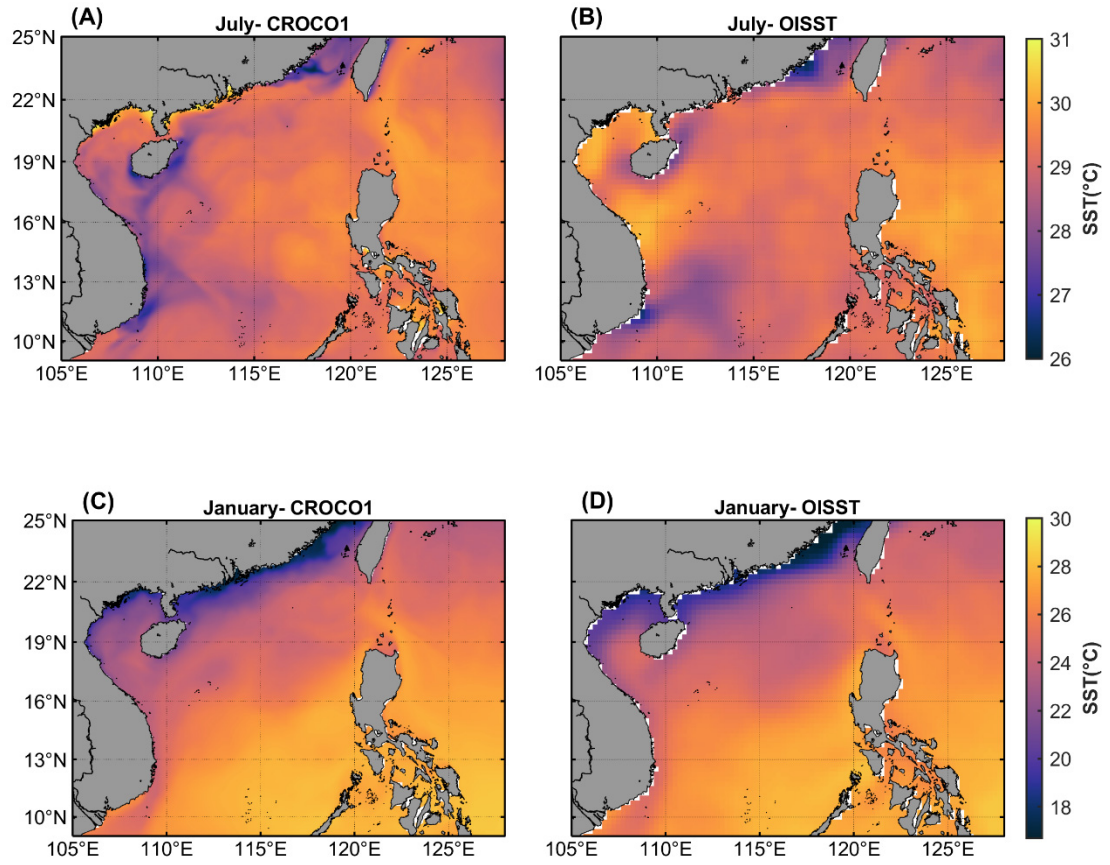
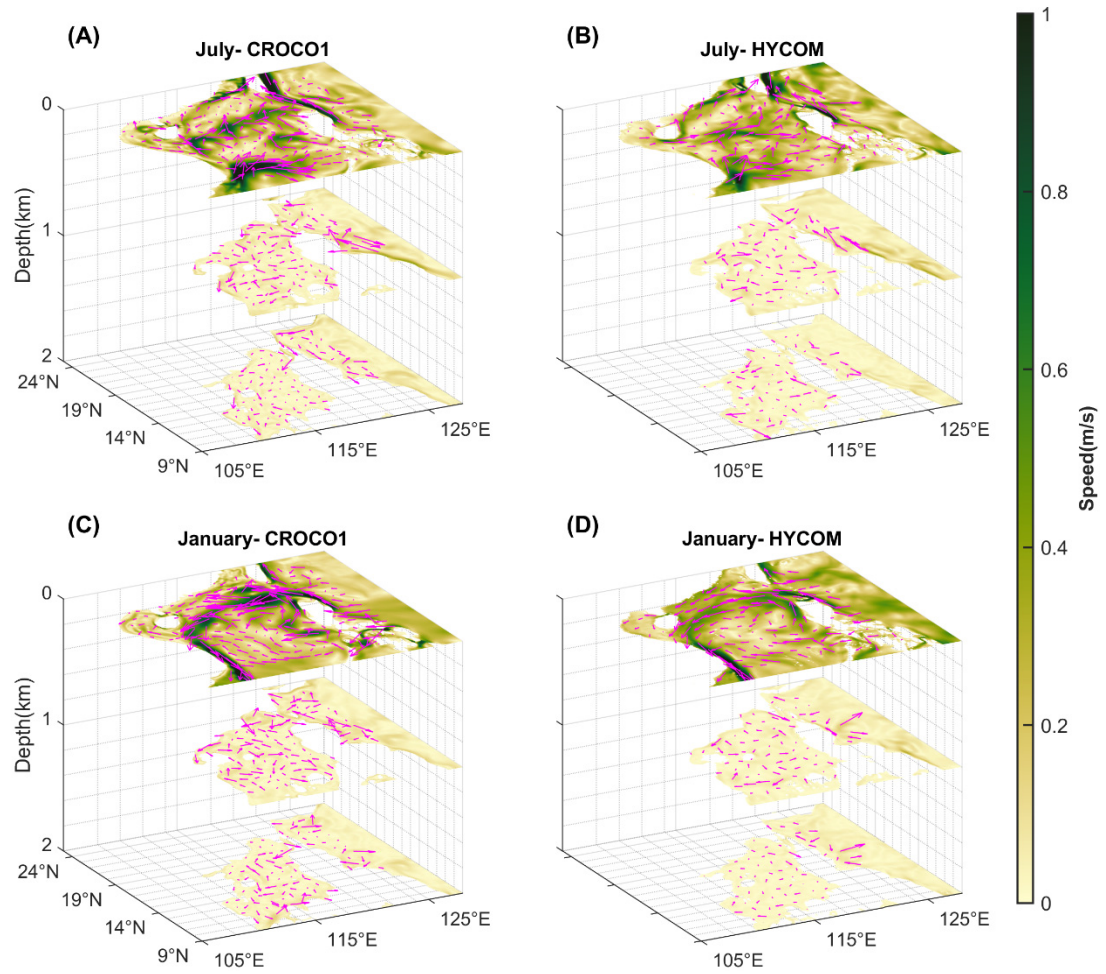


## Supplementary Materials

Figures:



**Figure S1.** The monthly averaged SST of (A) CROCO1 and (B) OISST in July, (C) CROCO1 and (D) OISST in January from 2017 to 2019.



**Figure S2.** The monthly averaged circulation of 0 m, 1000 m and 2000 m horizontal layers (both velocity arrows at 1000 m depth and 2000 m depth are magnified by 5 times). (A) CROCO1 and (B) HYCOM in July, (C) CROCO1 and (D) HYCOM in January from 2017 to 2019.