Figure S1: Seawater pCO₂ observation data used for training in the Indian Ocean.
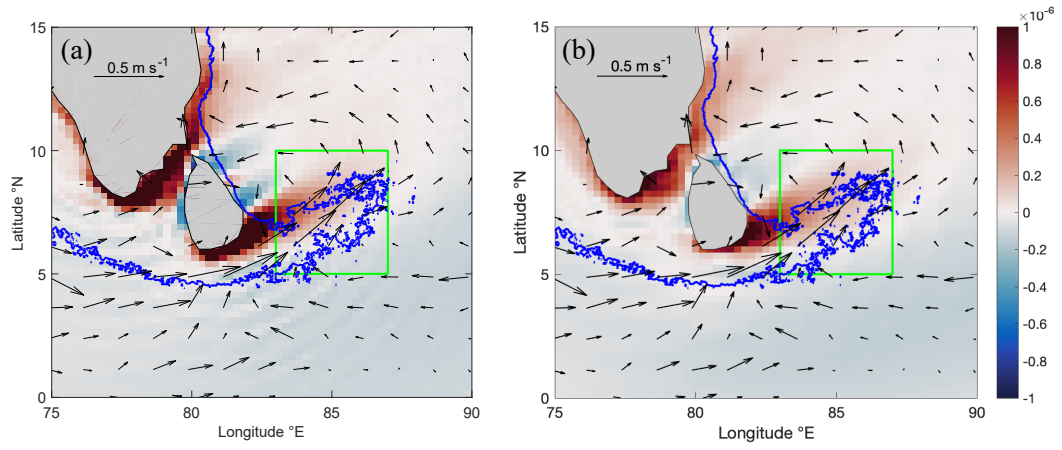
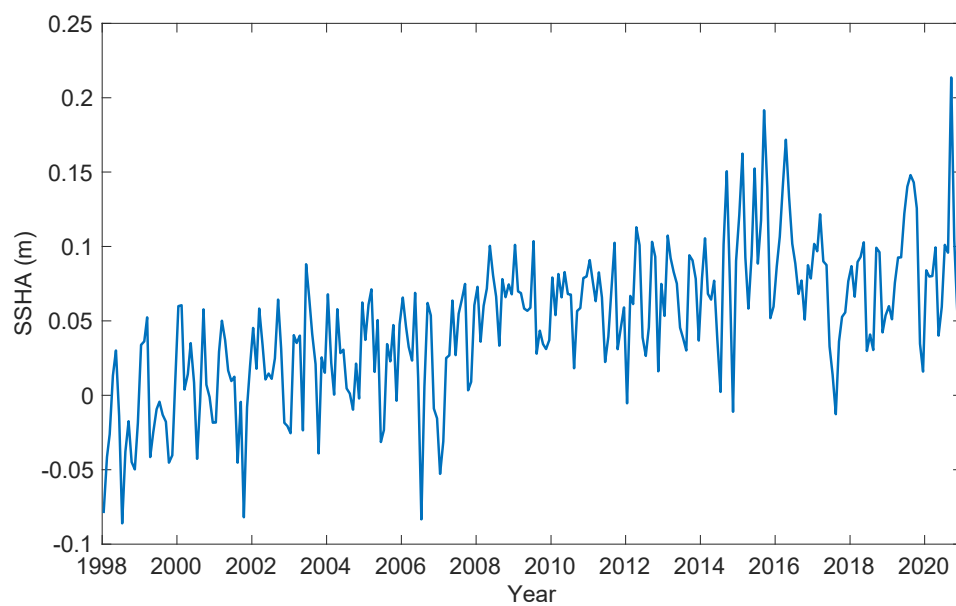Figure S2: Winds stress curl of (**a**) ERA5 and (**b**) CCMP in the southwest of Bay of Bengal.

Figure S3: Timeseries of mean SSHA in the SLD region from 1998 to 2020.