Validation of SMOS sea surface salinity with in-situ measurements
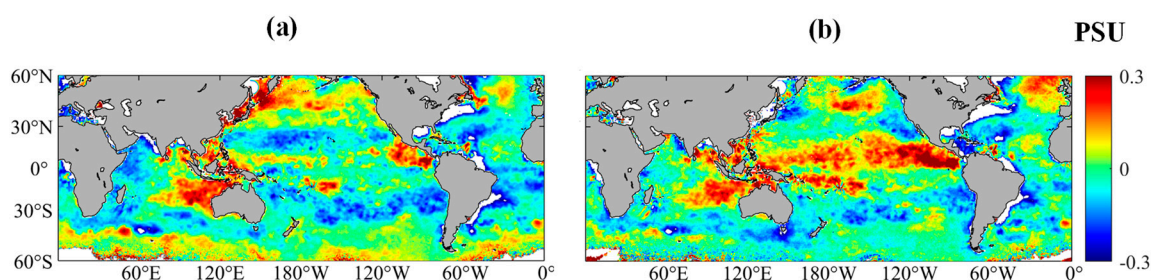
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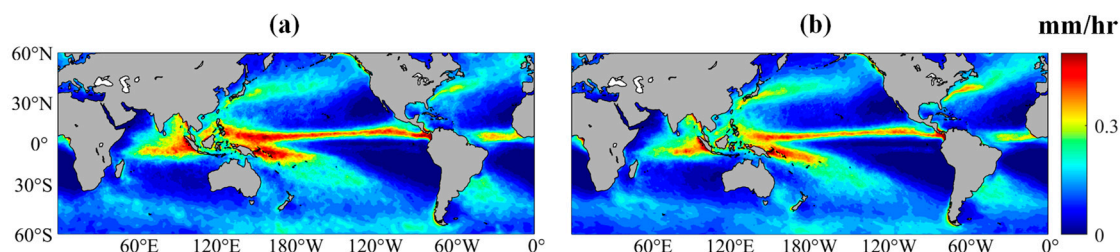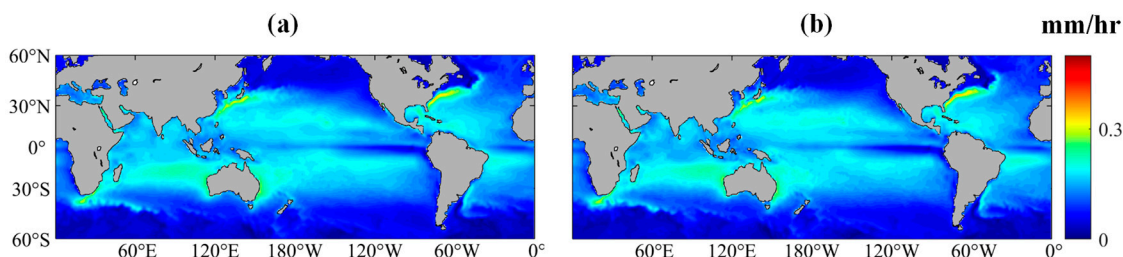**Introduction**

This file contains the spatial distribution diagrams of salinity bias, precipitation, evaporation and E-P difference averaged from April 2011 to January 2015 and from February 2015 to December 2019, respectively. There diagrams serve as the supporting evidence of positive bias of SSS after 2016. The precipitation data is provided by The Global Precipitation Measurement (GPM) mission, whereas the precipitation data comes from OAFLUX dataset. We unified the unit of two datasets as mm/hr.
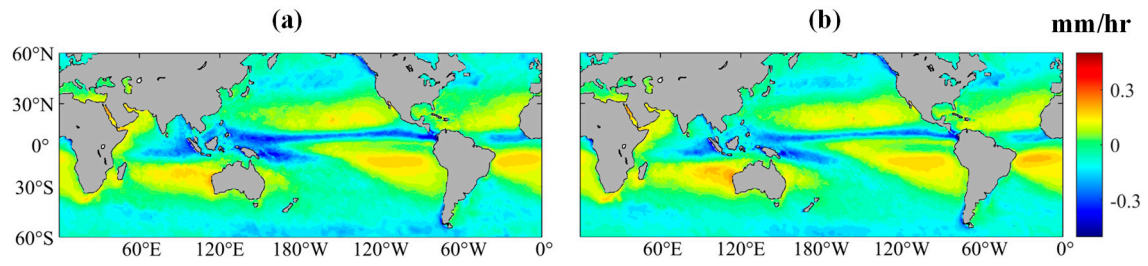

Figure S1. Bias of Sea Surface Salinity (SSS) averaged from (a) April 2011 to January 2016 and (b) February 2016 to December 2019. The unit is PSU.
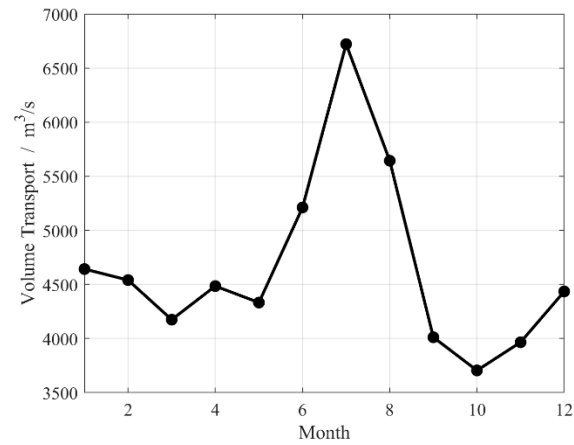

Figure S2. Precipication rate averaged from (a) April 2011 to January 2016 and (b) February 2016 to December 2019. The unit is mm/hour.

Figure S3. Evaporation rate averaged from (a) April, 2011 to January 2016 and (b) February 2016 to December 2019. The unit is mm/hour.

Figure S4. The rate of evaporation minus precipitation averaged from (a) April 2011 to January 2016 and (b) February 2016 to December 2019. The unit is mm/hour.

Figure S5. Seasonal freshwater discharge from 256 rivers flowing into the Baltic Sea based on Global Data Runoff Center (GRDC) Data. .