

Long-Term Assessment of Sentinel-3 NRT Wind and Wave Data

Ocean Surface Topography Science Team Meeting,
virtual, 19-23 October 2020

19 October 2020

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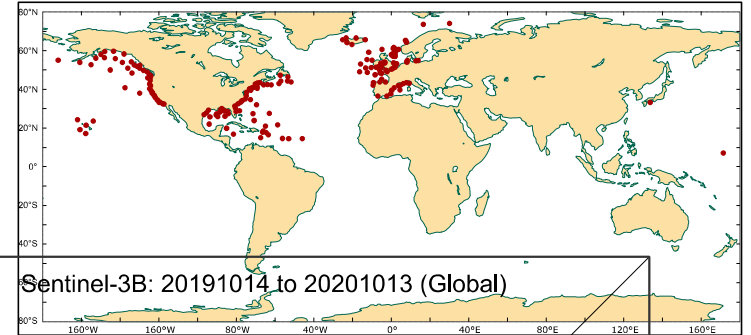
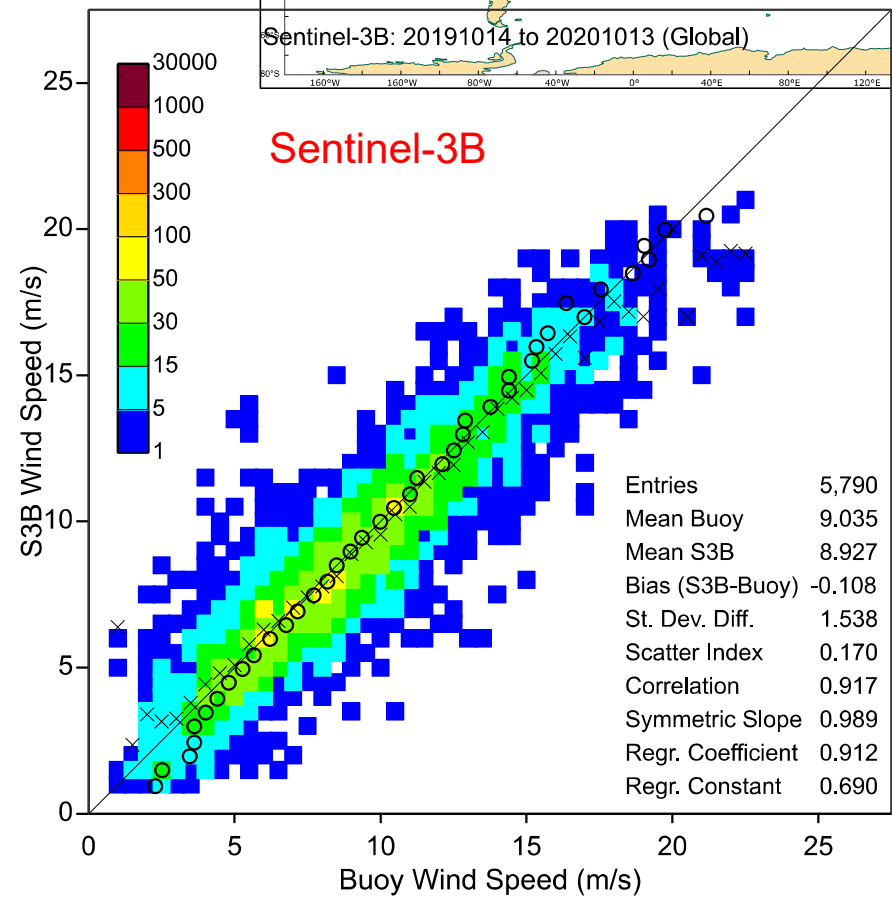
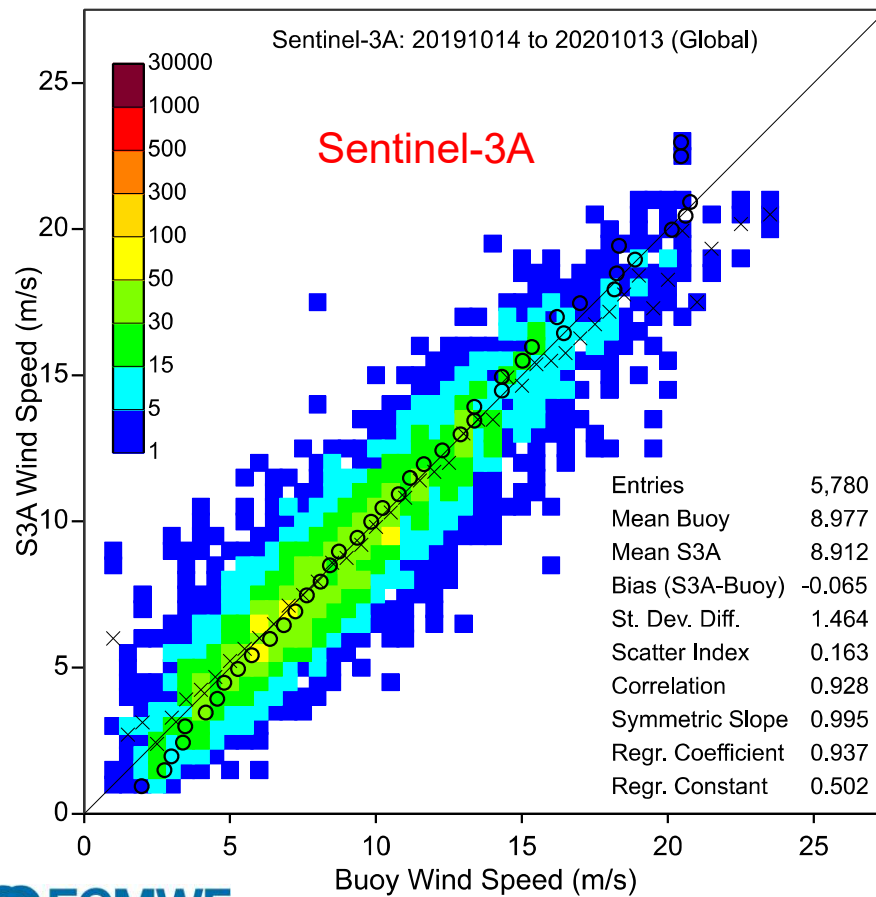
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Introduction

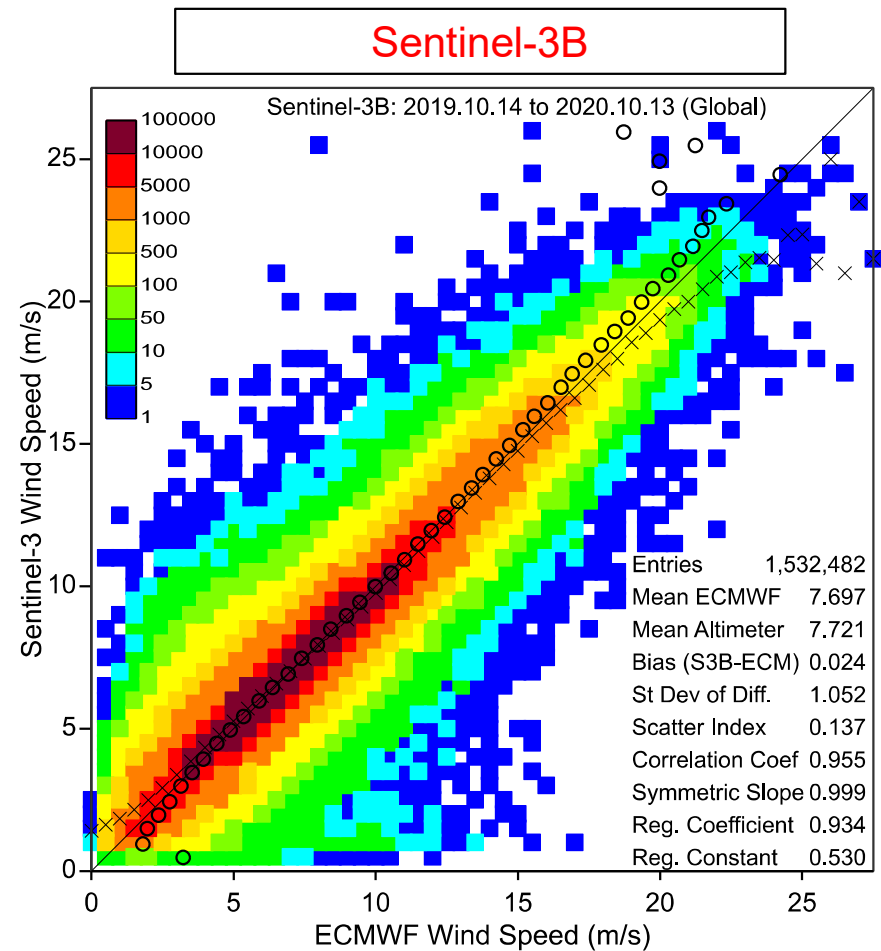
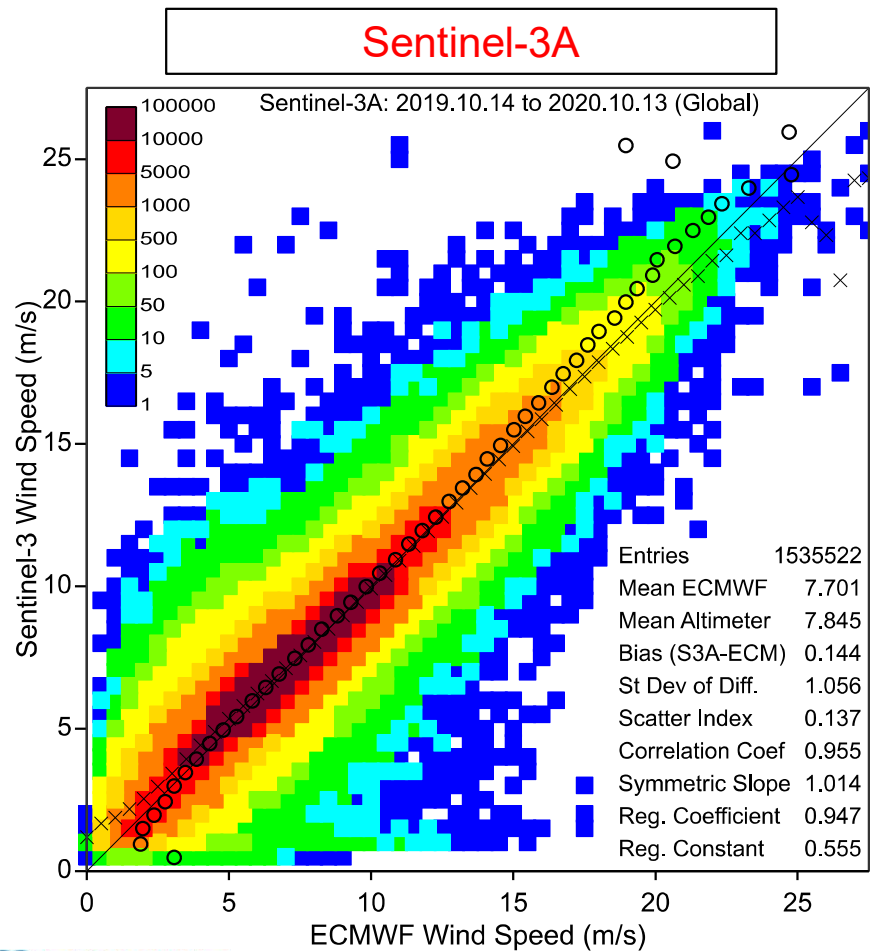
- Sentinel-3A & Sentinel-3B radar altimeter (SRAL) **near real time (NRT)** Level 2 STM Marine Product (SR_2_WAT). Only 1-Hz data are considered.
- Products:
 - wind speed
 - Significant wave height (SWH).
- Latest status of products.
- Validation against ECMWF model and in-situ measurements.

Sentinel-3A SAR Wind Speed

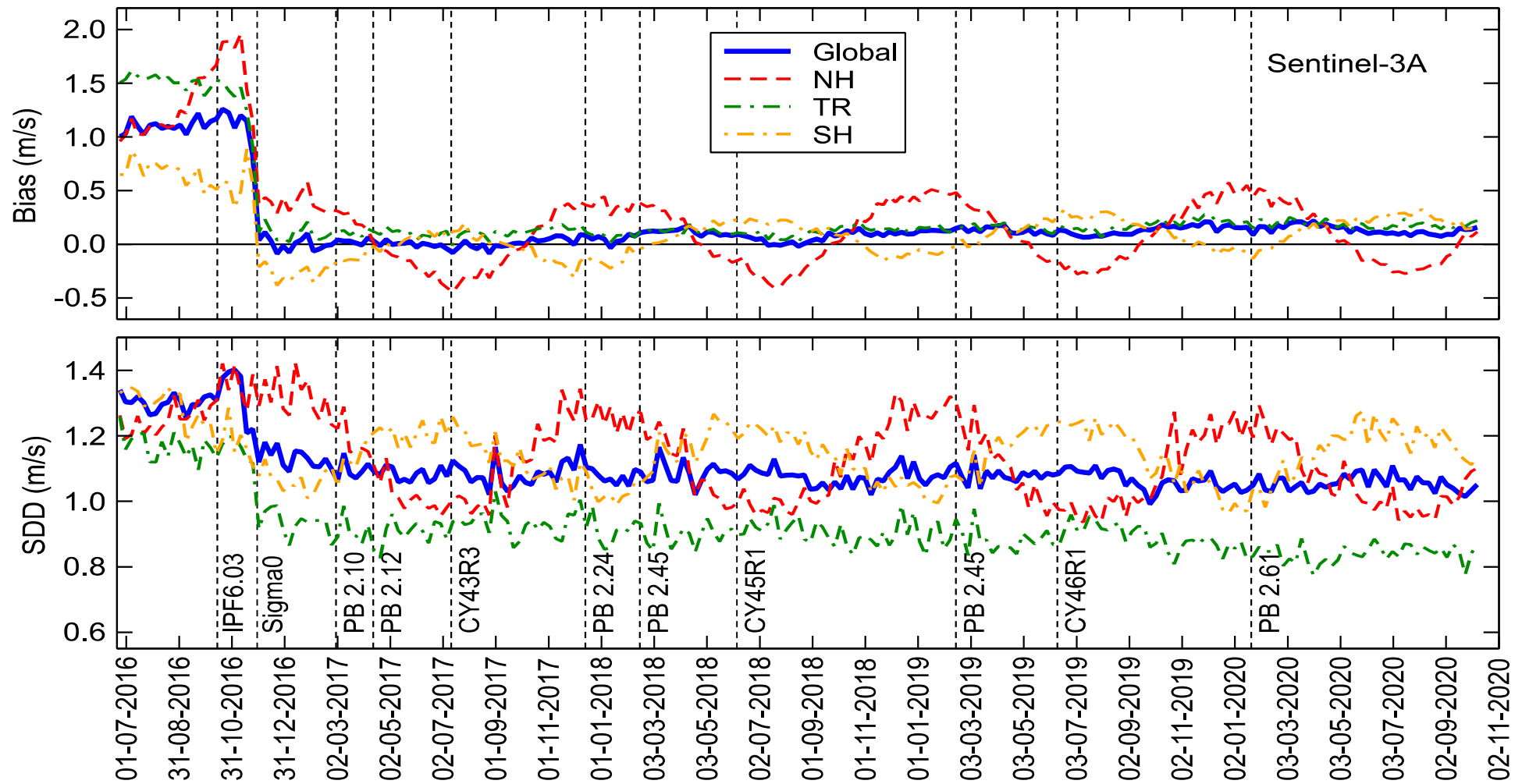
Sentinel-3 SAR wind speed comparison against in-situ data



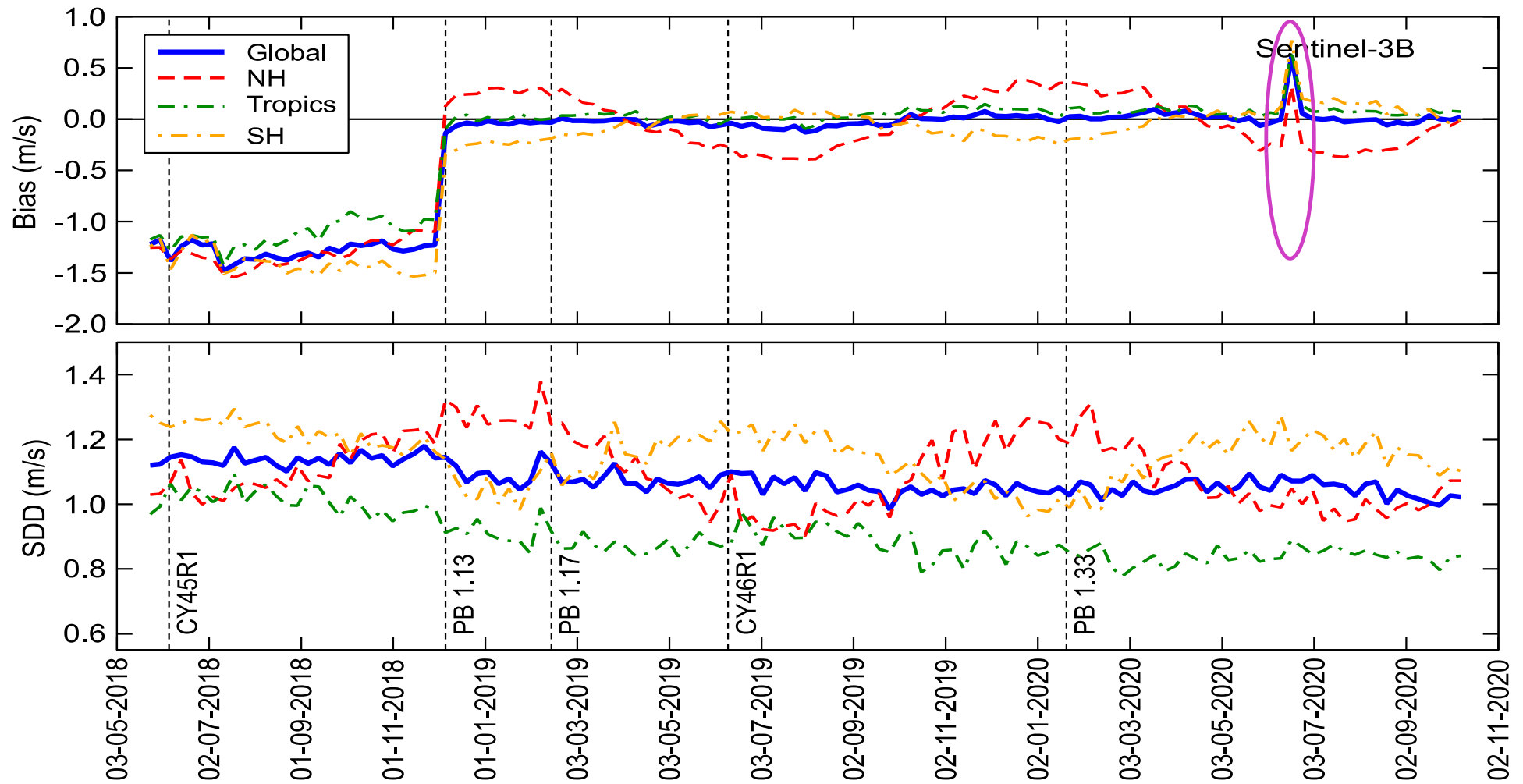
Sentinel-3 SAR wind speed comparison against model



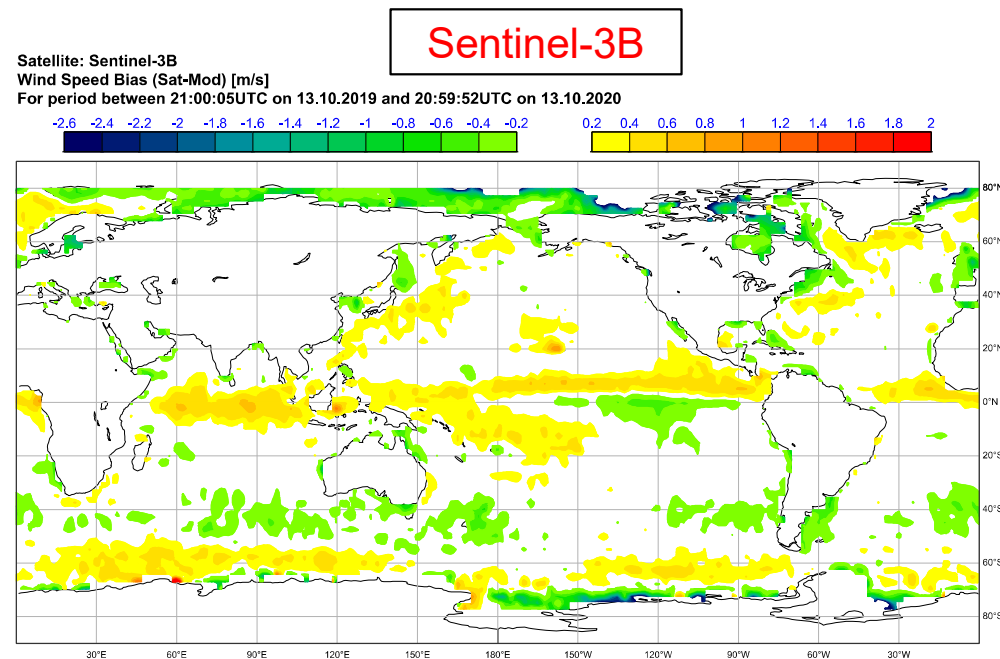
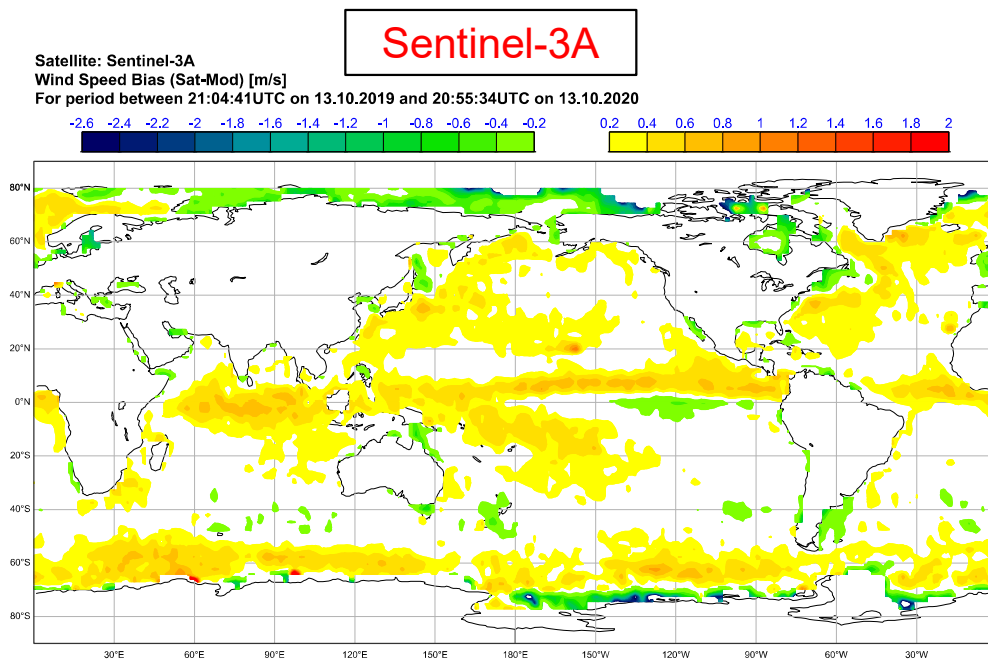
S3A SAR Wind Speed Bias & SDD (wrt model)



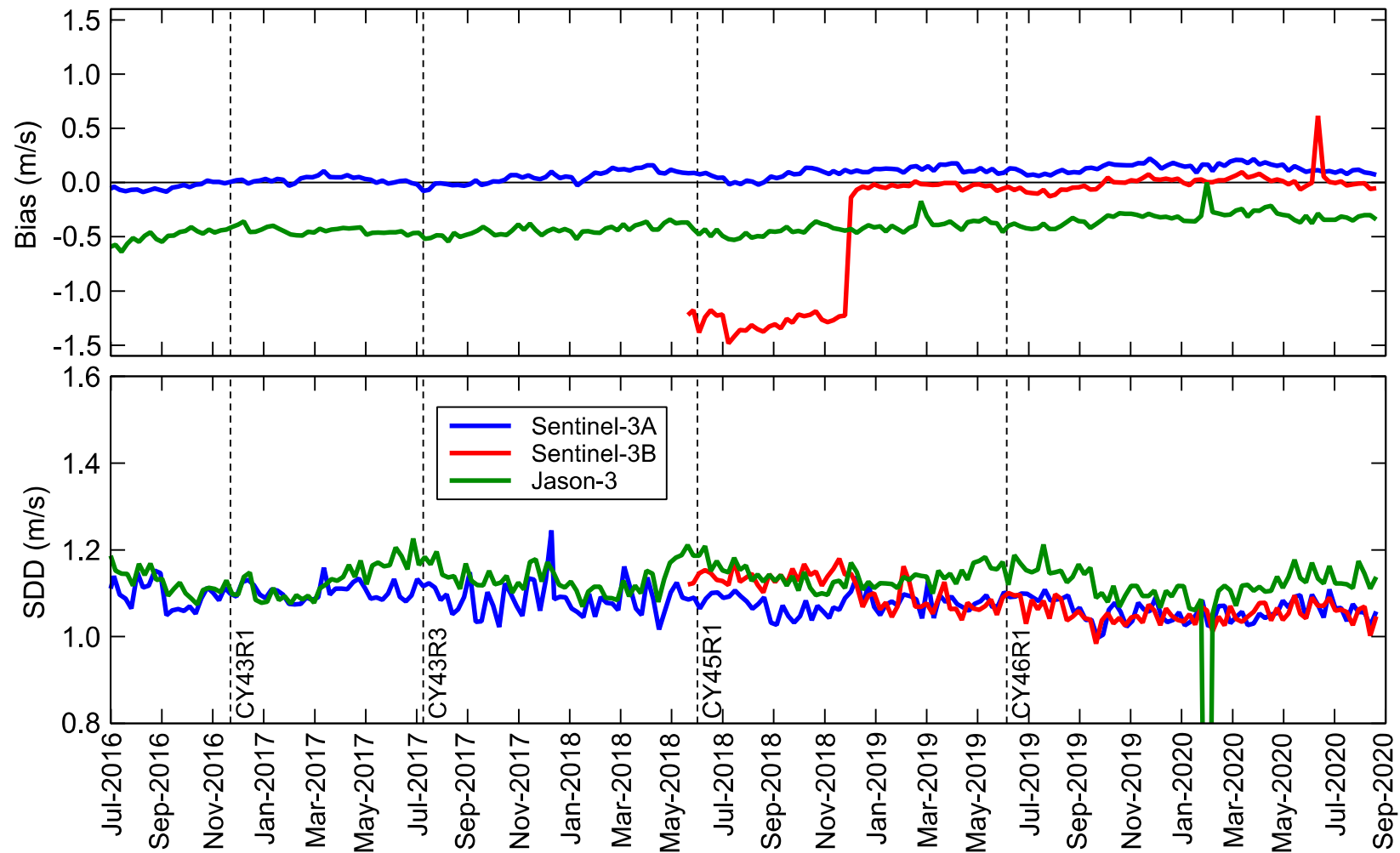
S3B SAR Wind Speed Bias & SDD (wrt model)



Sentinel-3 wind speed bias against model

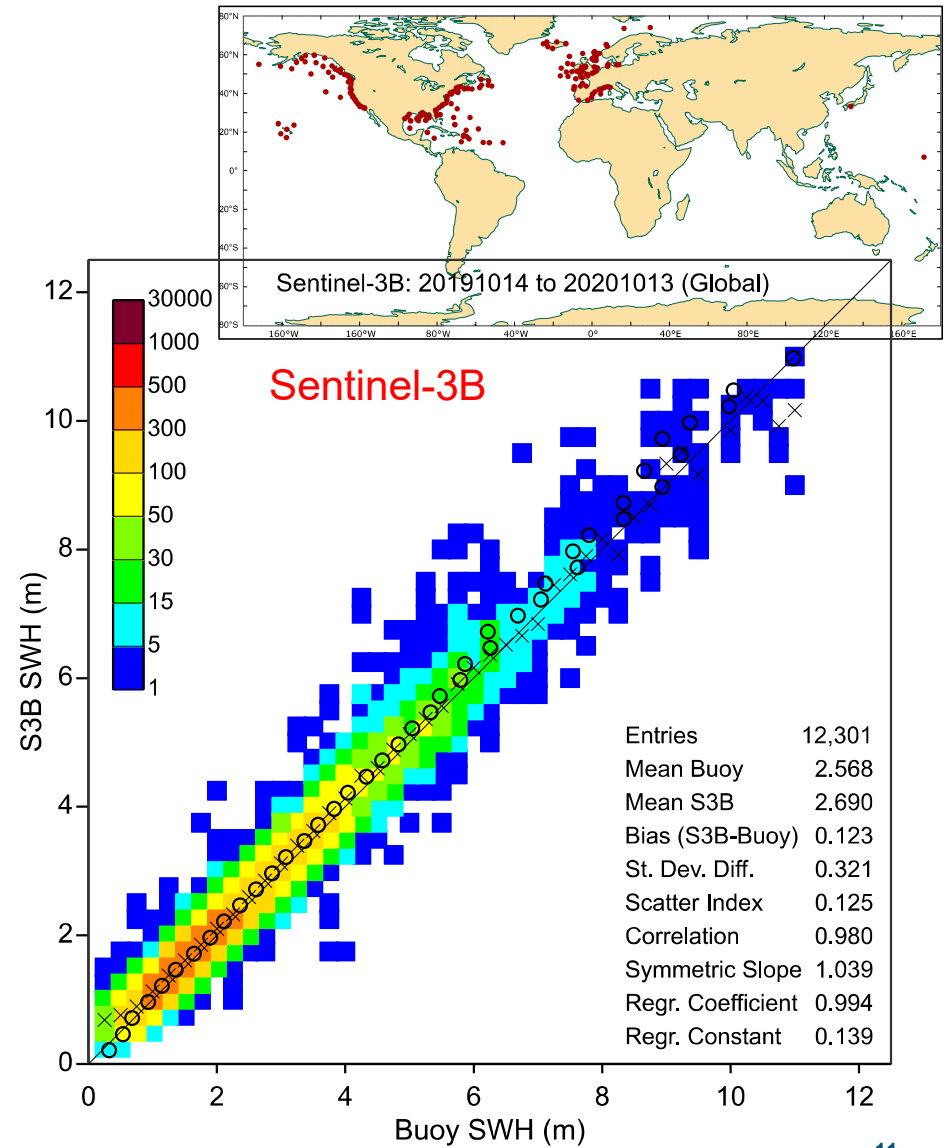
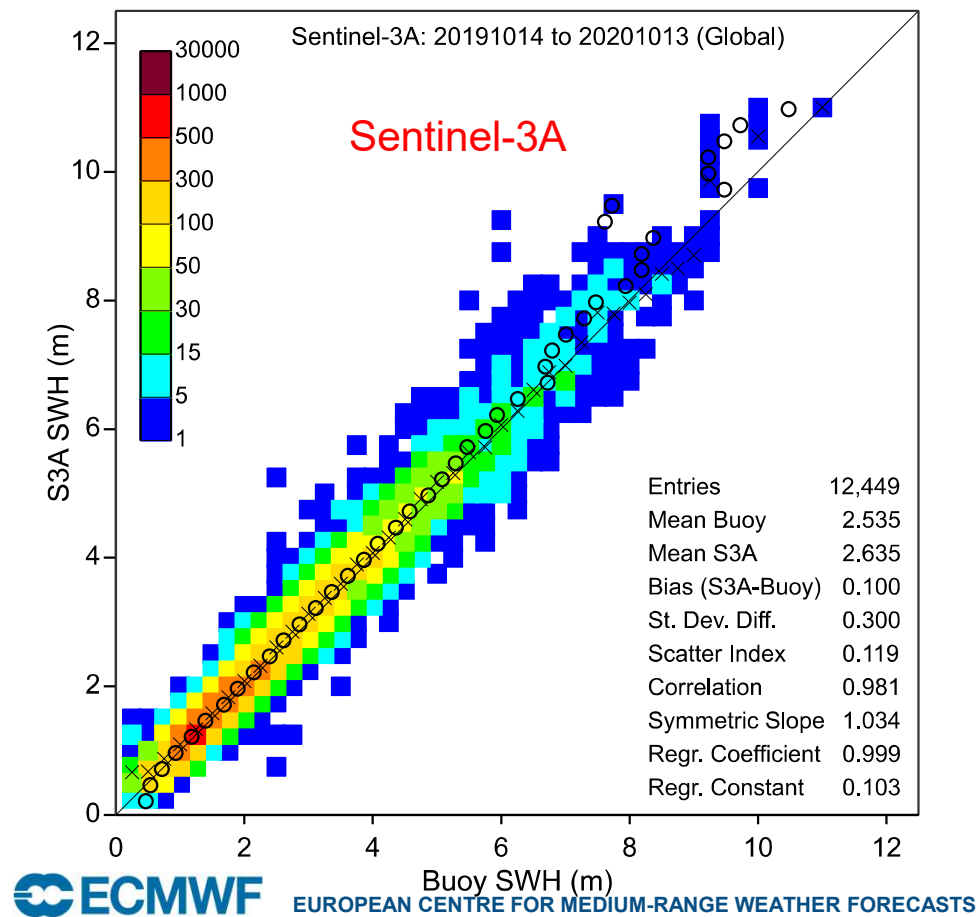


Sentinel-3A, 3B & Jason-3 wind speed bias & SDD (wrt model)

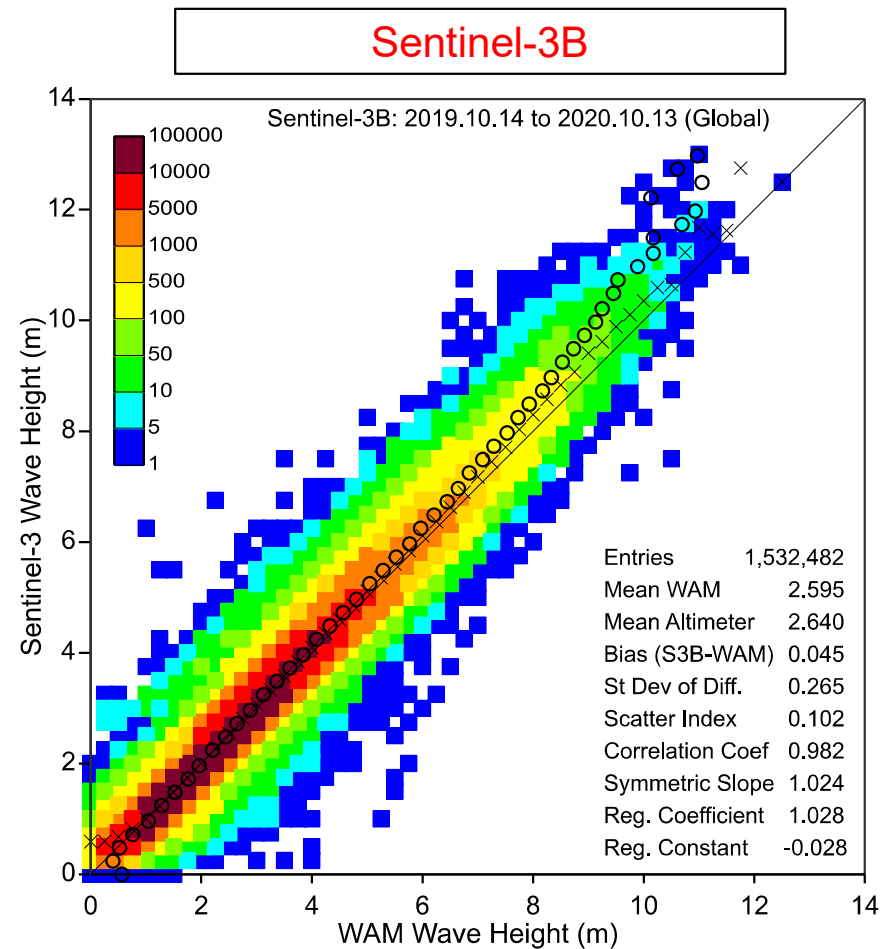
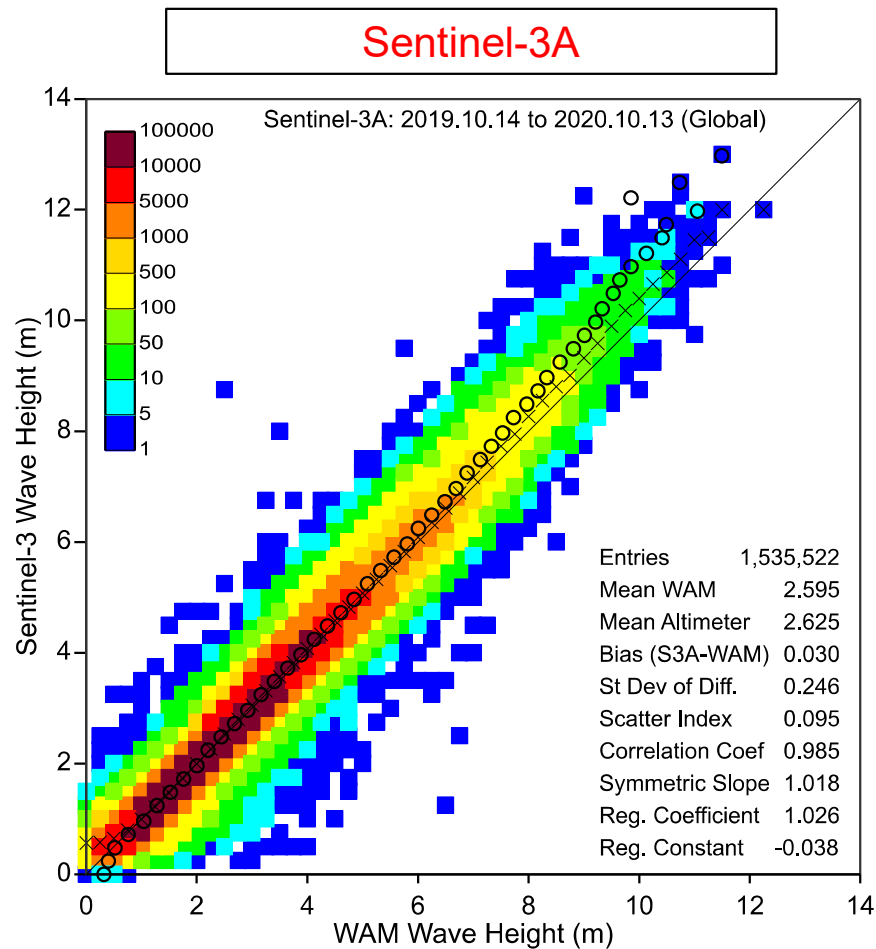


Sentinel-3 SAR Significant Wave Height (SWH)

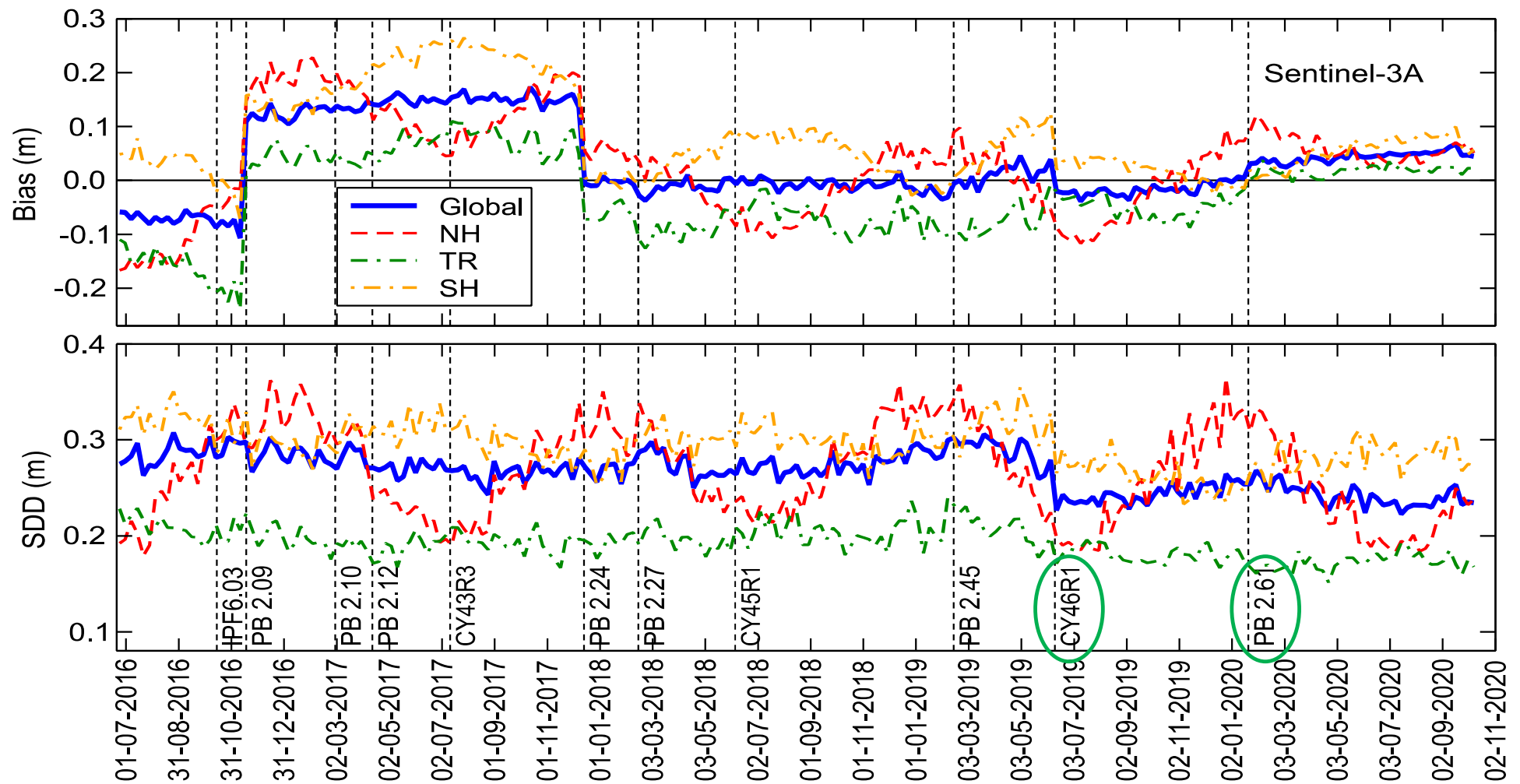
Sentinel-3 SAR sig. wave height comparison against in-situ data



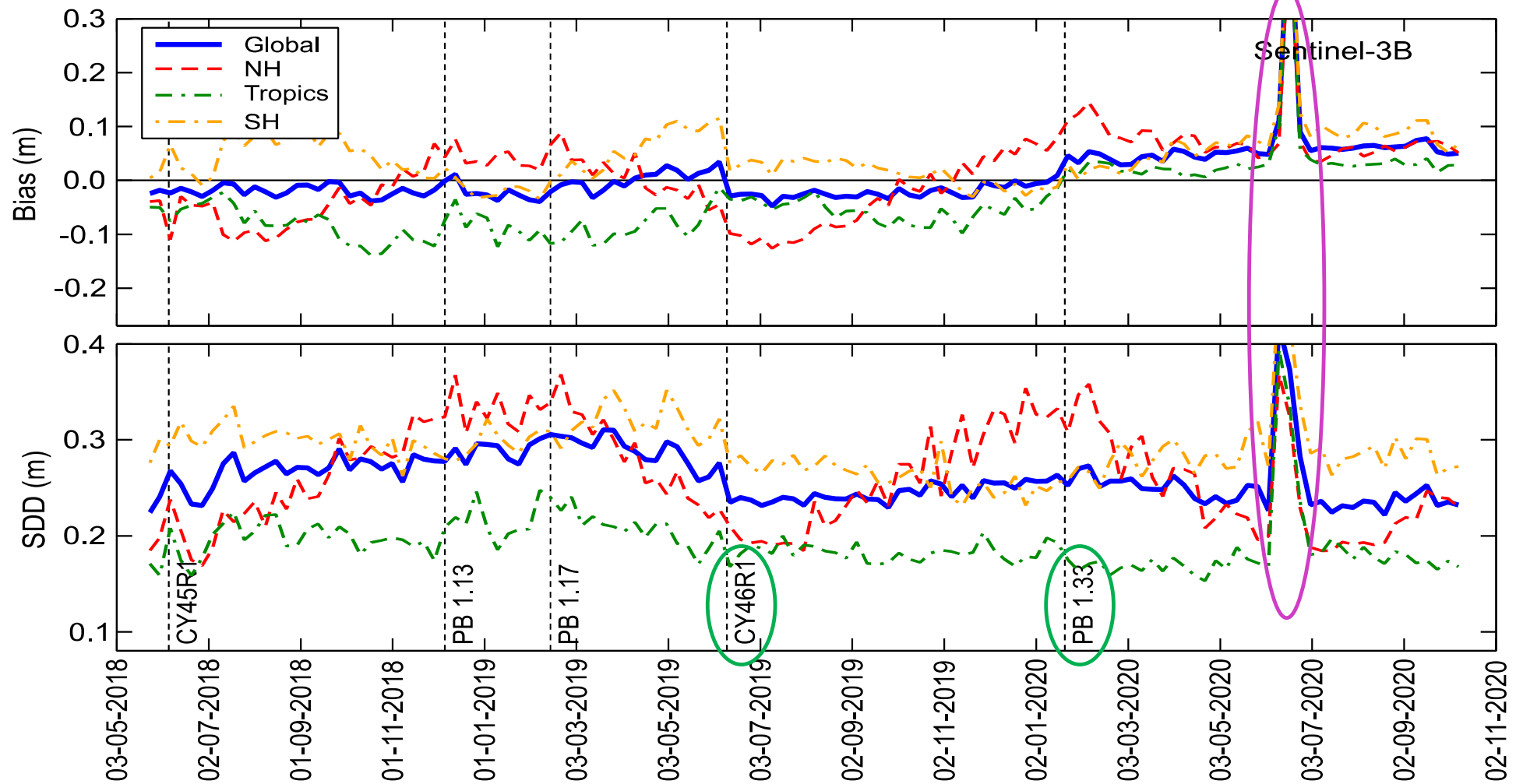
Sentinel-3 SAR sig. wave height comparison against model



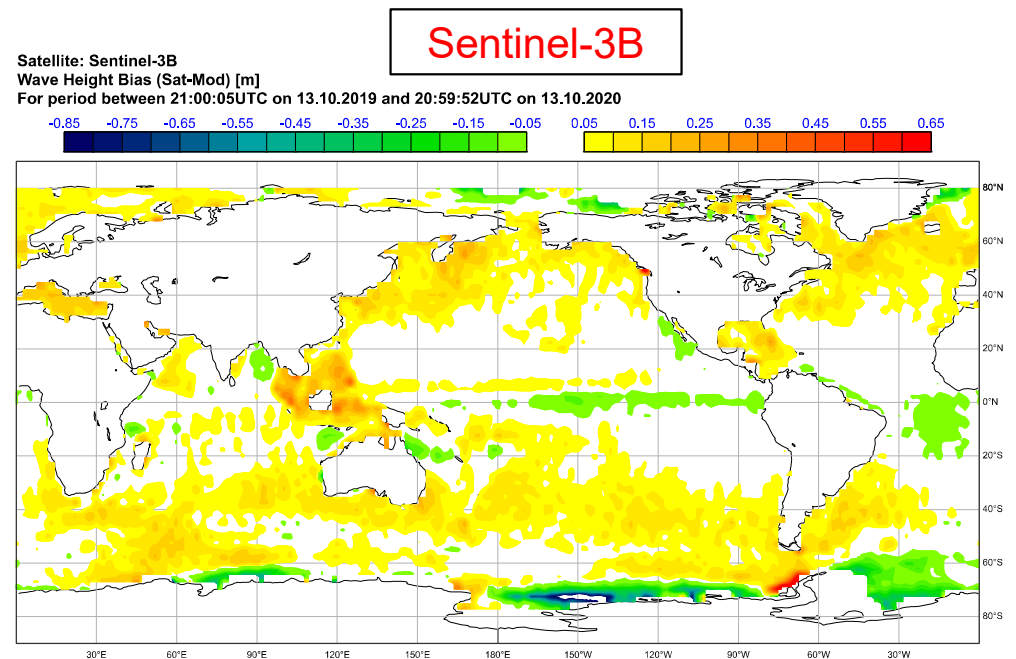
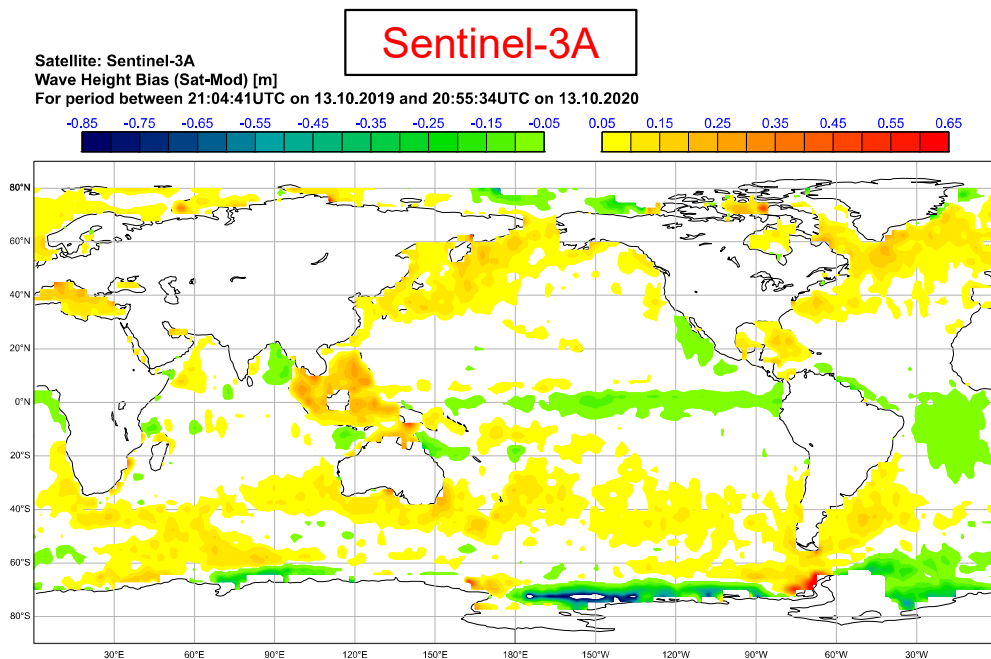
S3A SWH Bias & SDD (wrt model)



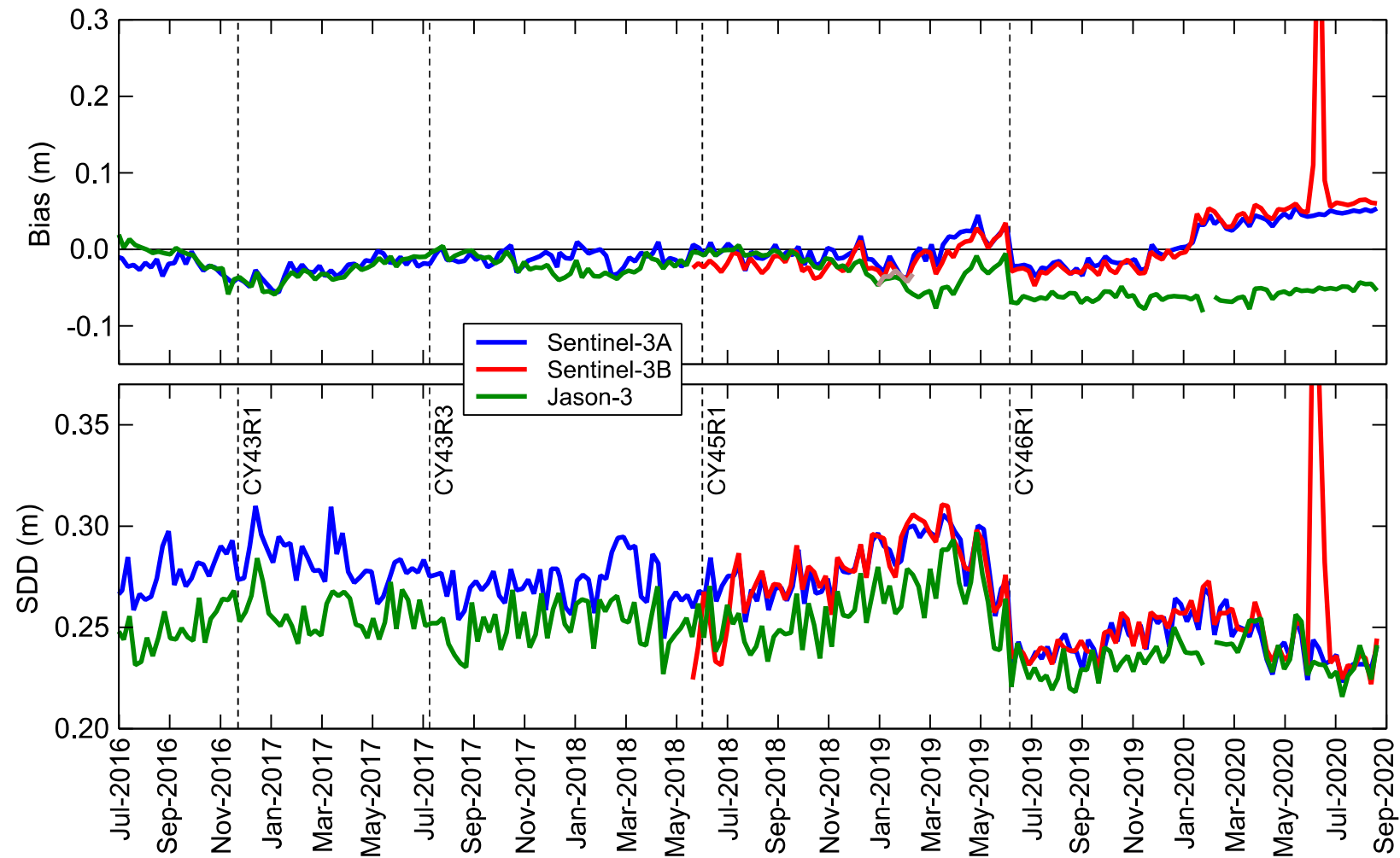
S3B SWH Bias & SDD (wrt model)



Sentinel-3 significant wave height bias against model



Sentinel-3A, 3B & Jason-3 SWH bias & SDD (wrt model)



Conclusions



Conclusions

Operational NRT Sentinel-3 wind and wave measurements were assessed.

Surface Wind Speed:

- Stable and very good: Globally unbiased & SDD=1.0 m/s & 1.5 m/s wrt model & buoys, respectively. (regional biases with seasonal changes).
- Slightly better than Jason-3.

Significant Wave Height (SWH):

- Although SWH is stable and very good.
 - Its SDD is higher compared to other altimeters (recent SDD values are very close to those of Jason-3).
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- **Improvement in wave model (CY46R1) in June 2019 picked up in the altimeter comparison.**