# HaiYang-2C data assessment and performances

## HaiYang-2C assessment of Short Time Critical data over the year 2022.


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### Context

- HaiYang-2C is an NSOAS satellite, it was launched on 19/09/2020 and belongs to the long series of HY satellites
- Radiometer, dual frequency ku and c bands, scaterometer
- Orbit GPS + DORIS, 10-days cycle, reach 66° latitudes

### Parameter of interest

- Sea Level Anomaly
- Significant Wave Height
- Wind speed

### Potential candidate for future integration in SL Copernicus Marine component

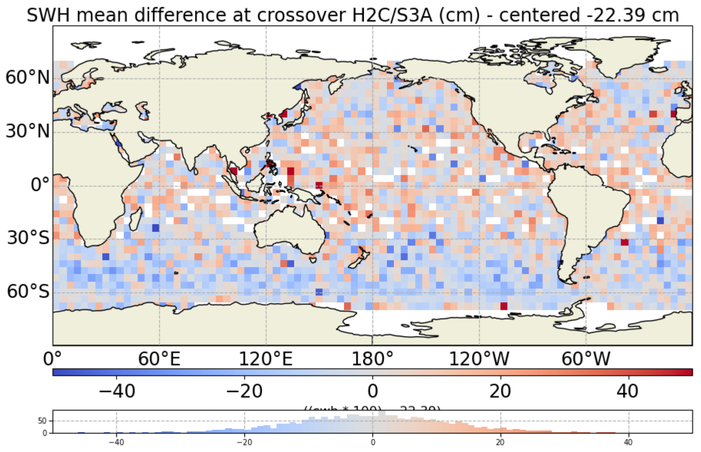
### Integrated in Wind & Waves Copernicus Marine Service at the end of the year

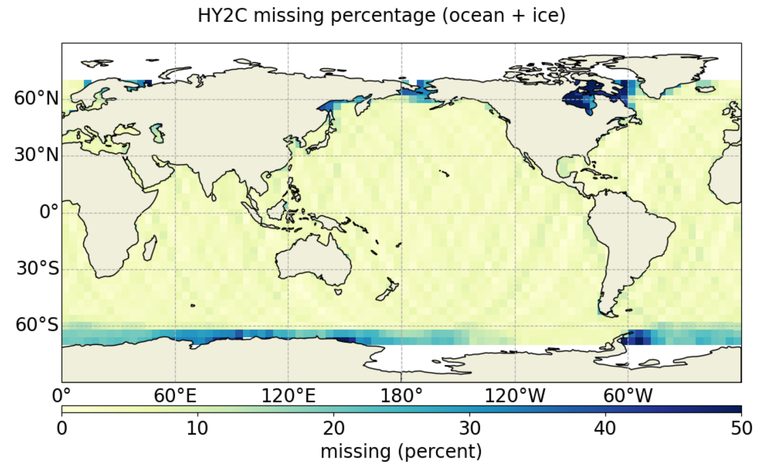
### OSTST 2022 related presentations

- Feed-back and contribution after several years of HaiYang-2B data availability.
- The 2022 Honga Tonga Tsunami monitored by satellite altimetry and SAR.

### Data Coverage

- Around 5% of missing data in average
- Missing measurements mainly located at high latitudes (sea ice regions)
- About 3% of edited measurements in average (not including specific/ground segment events)



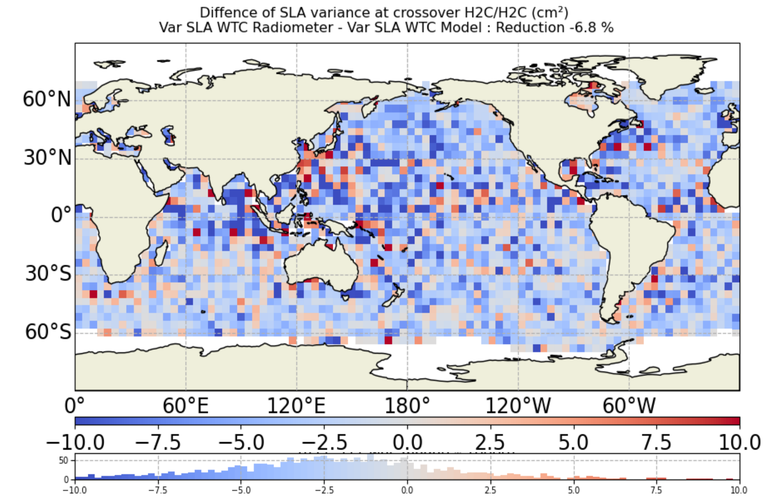



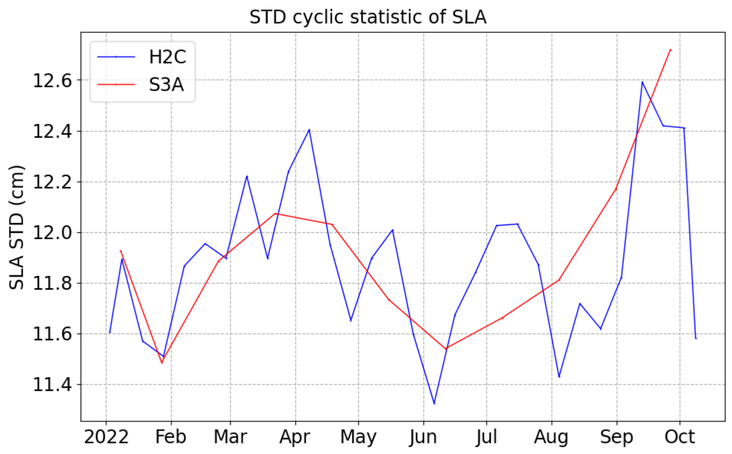

### Significant Wave Height HY2C/S3A at crossover

- Global bias of 22.4 cm
- Bias related to strong wave areas as observed for HY2B

### Radiometer wet tropospheric correction

- Reduction of 6.8% of SLA variance
- Quality of microwave radiometer seems good



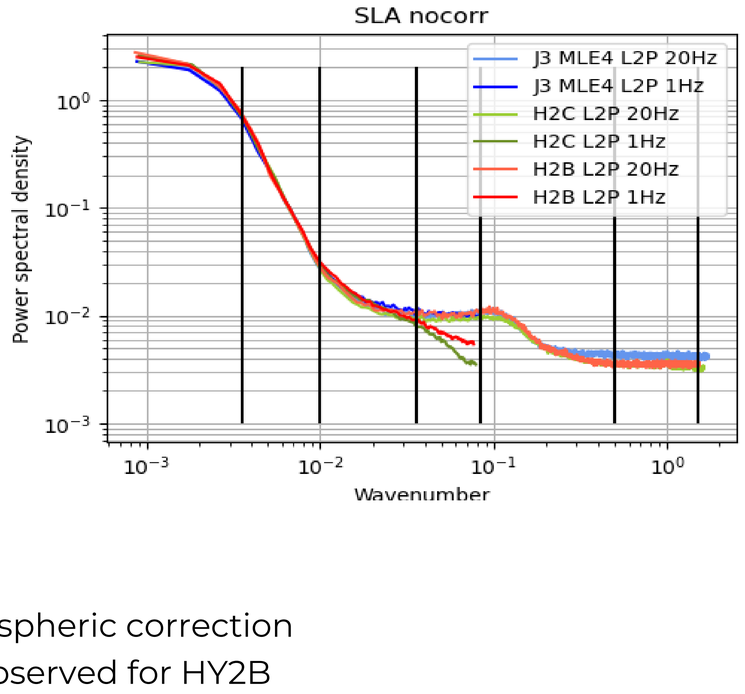




### Cyclic statistics of SLA

- In line with other missions
- Stable over time

### Spectrum

- Similar performance of HY2C 20Hz spectrum compared to HY2B
- Lower noise level on range 20Hz for HY2
- HY2-B/C 20Hz and 1Hz spectra are not superimposed for wavelengths below 30km. Specific denoising processing might be applied
- Long wavelengths of HY2 are in line with J3




### Conclusions

- Good data availability over ocean
- Good performance of radiometer for wet tropospheric correction
- Bias on SWH related to strong wave areas as observed for HY2B
- SLA cyclic statistics are in line with other missions and stable over time
- Noise level on range 20Hz is similar for HY2B and HY2C and slightly lower than for J3
- Specific post-processing is applied to the 1Hz range available in the products HY2