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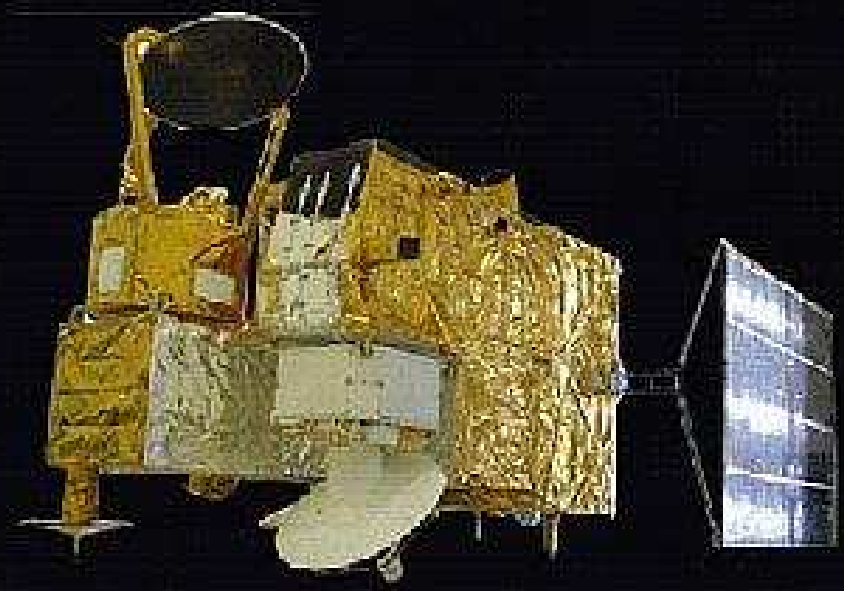
HY-2A data quality assessment over ocean



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SALP
Service Altimetrie & Localisation Precise

OSTST 2015

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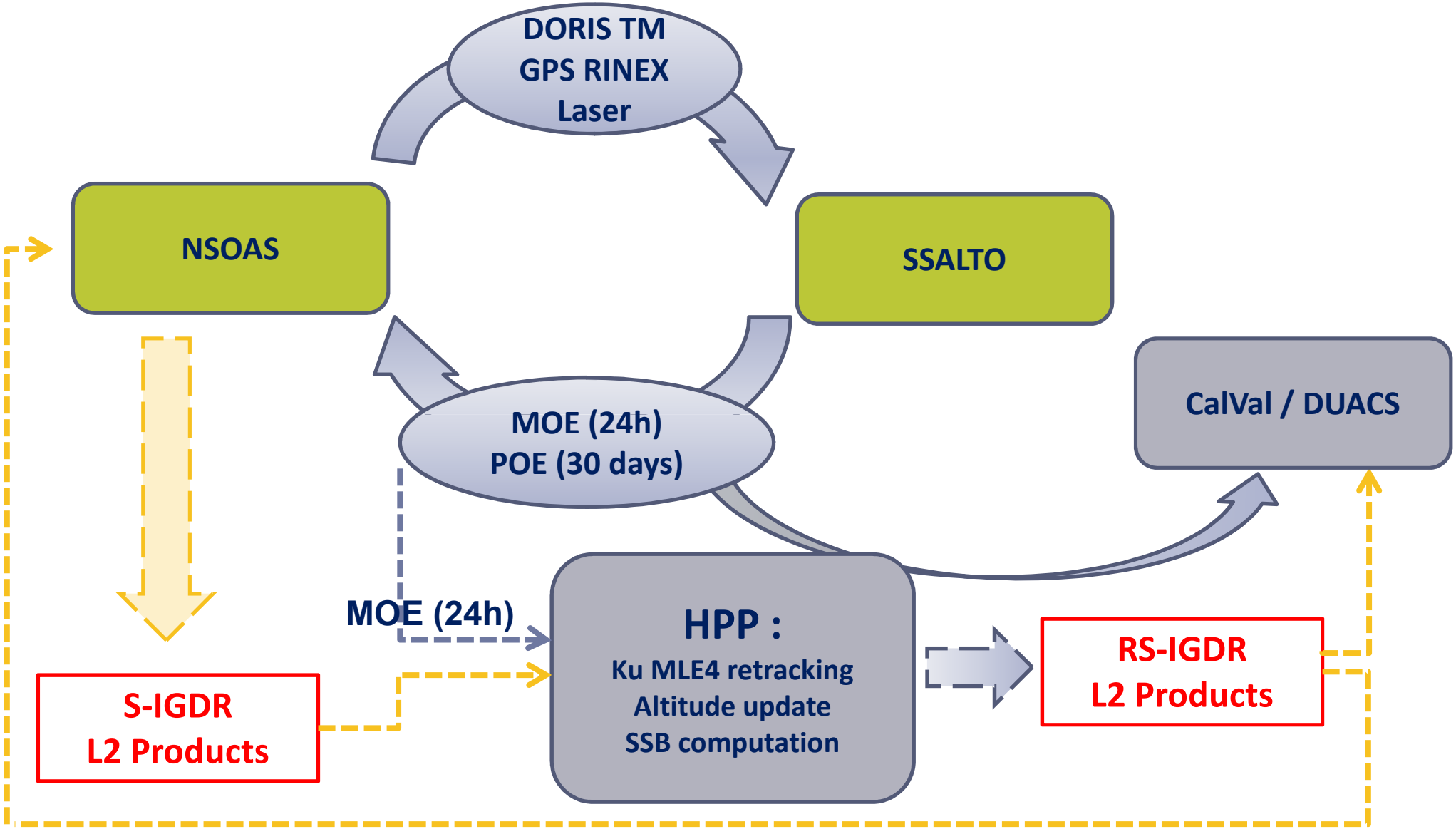
Reston, VA

Plan

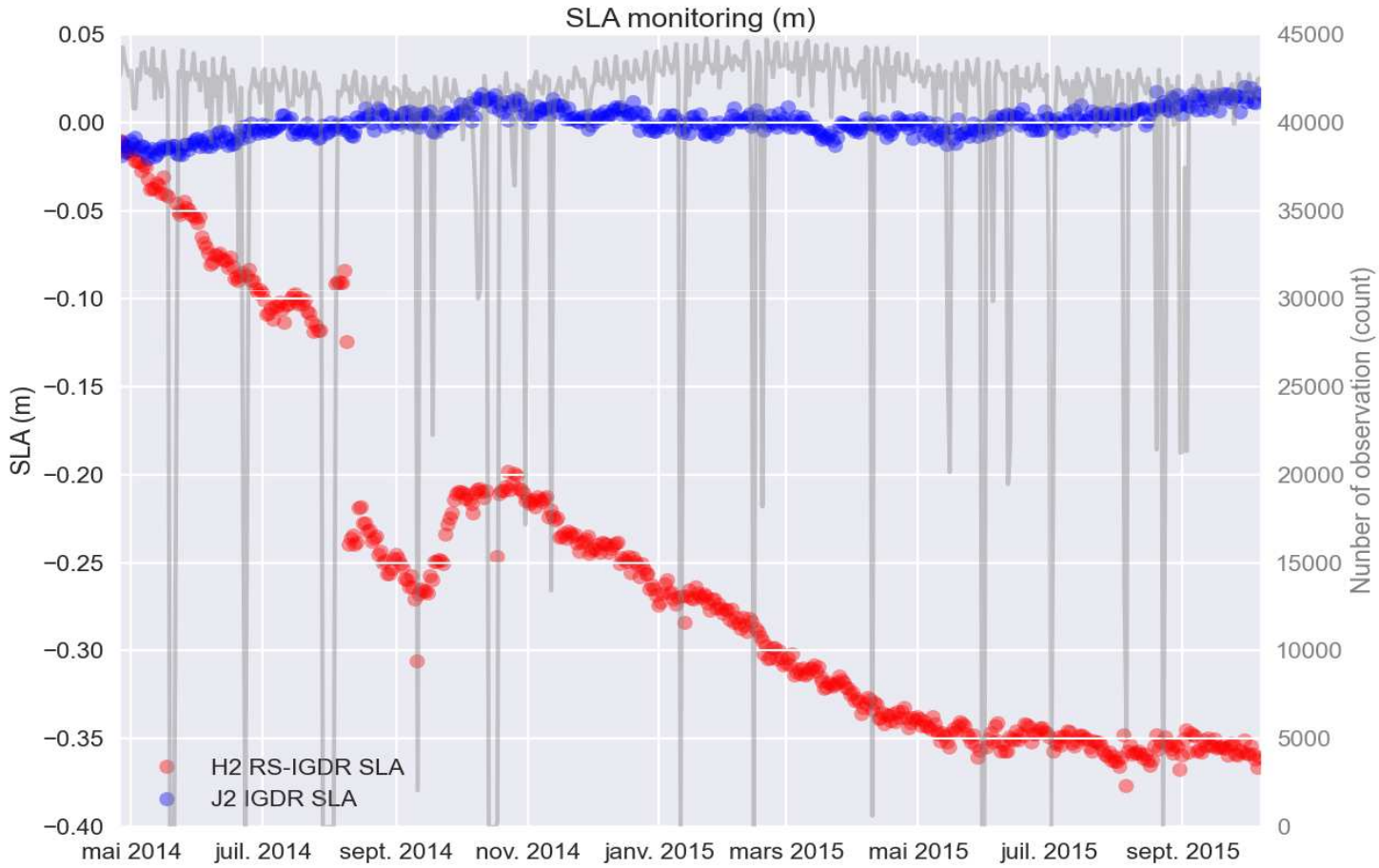
- Overview of the HY2 data quality during past 16 months in DUACS
- HY2 CNES&CLS processing software (HPP : HY2 Processing Prototype) evolutions to account for spurious effects
- L3 products are available on FTP server (**L2 also to selected Pis after NSOAS approval**) and via ODES system : '*The full series of our CorSSHs (all satellites: 60+ years of cumulated data!), including AltiKa and HY-2A altimeter missions*'

Overview of the CNES HPP processing



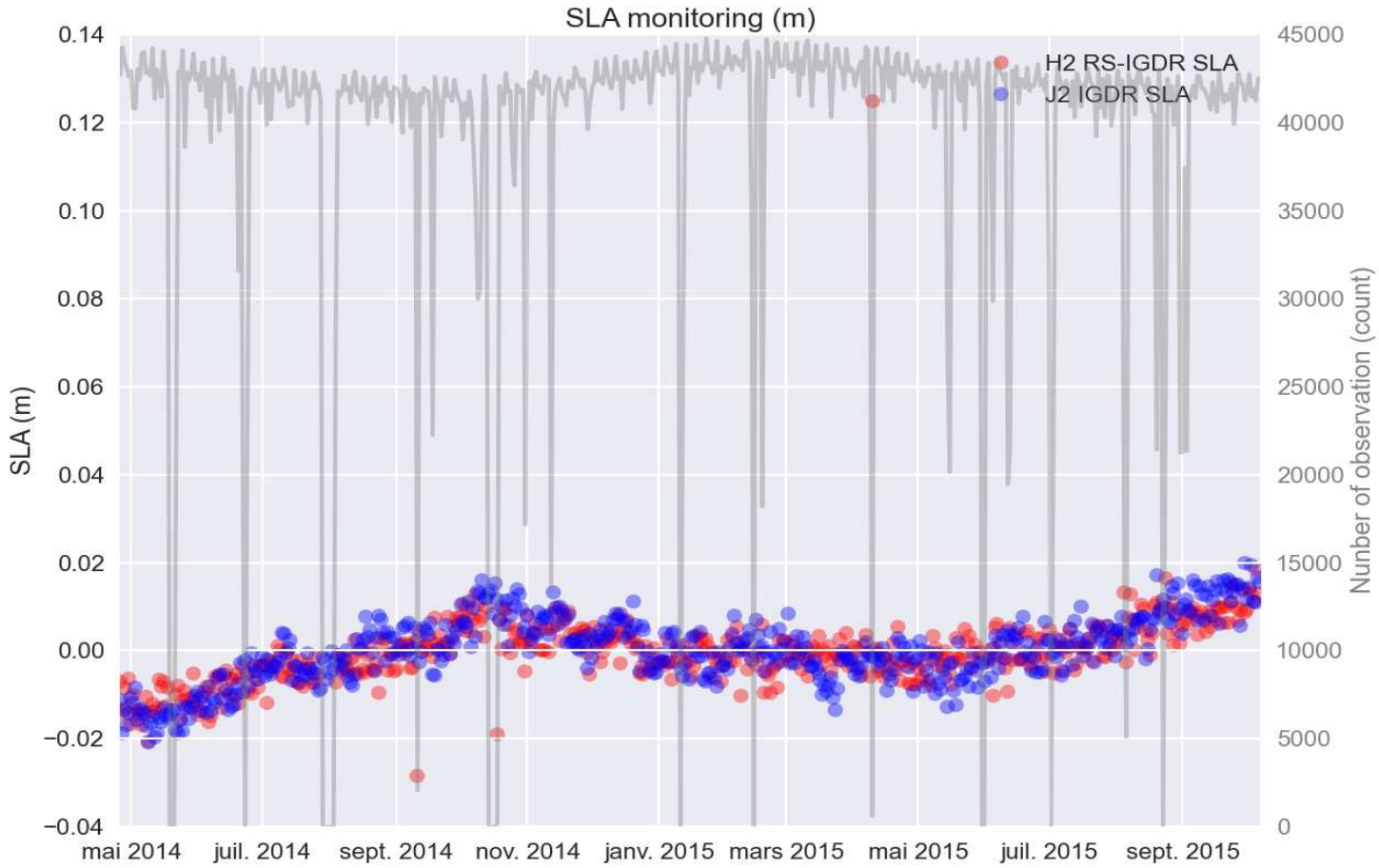
Sea-level performances

- Hy-2a Sea Level Anomaly is strongly impacted by the USO drift (as far as we can say …) and other ground processing side impacts (new observation …).



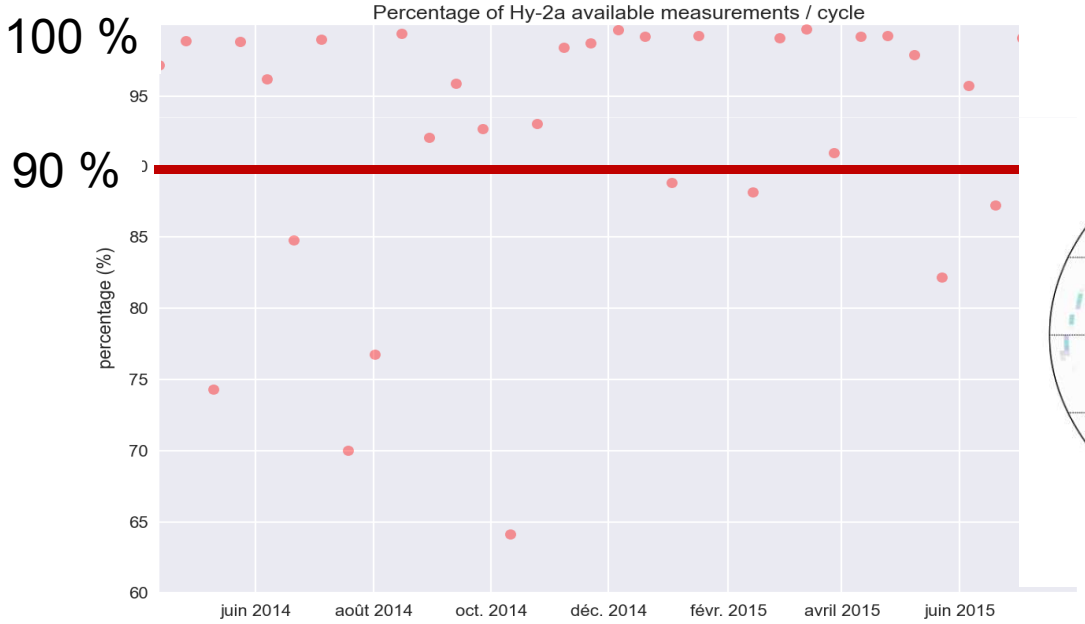
Sea-level performances

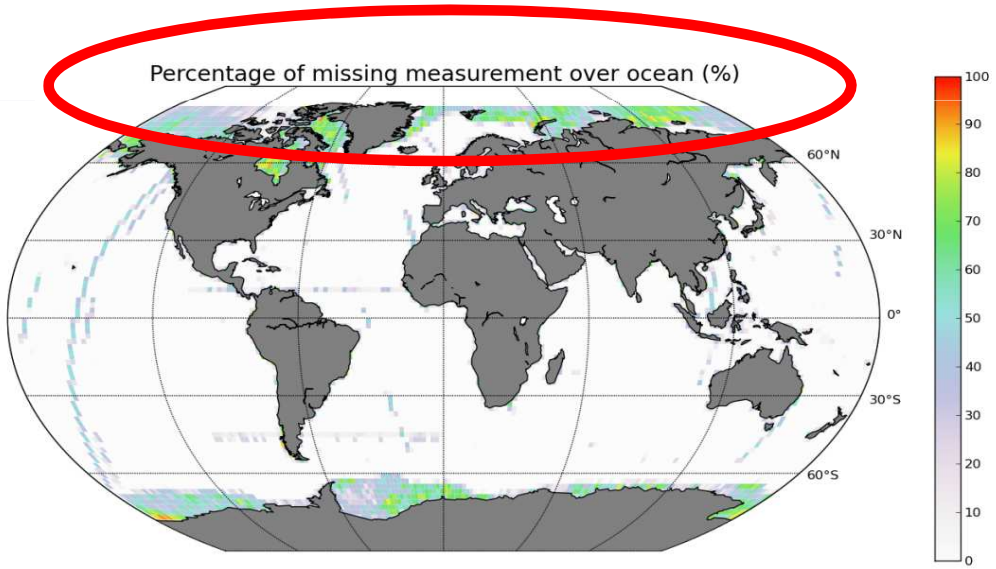
- SLA drift is compensated in DUACS thanks to the cross-calibration (HY2 SLA is set to JA2 values) and has no significant impact on SLA estimations



Data availability over ocean

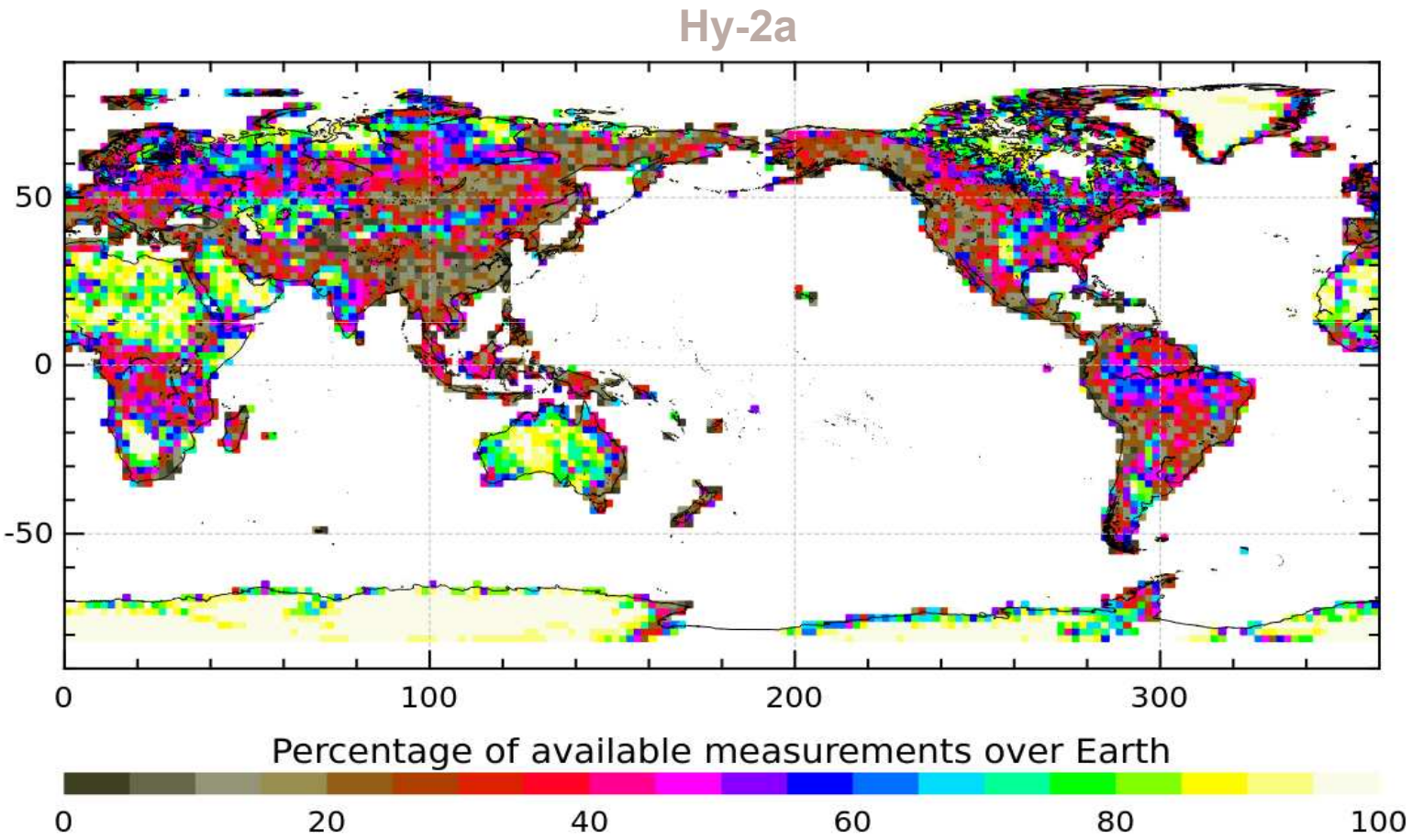
- Missing data mainly related to telemetry incidents. Data availability over ocean around 90% after removing major incidents, well below the one on Jason-2 and/or SARAL mission but still of interest for SALP/DUACS system. Mainly located over sea-ice which is related to the altimeter on board tracking (same observation over inland water).





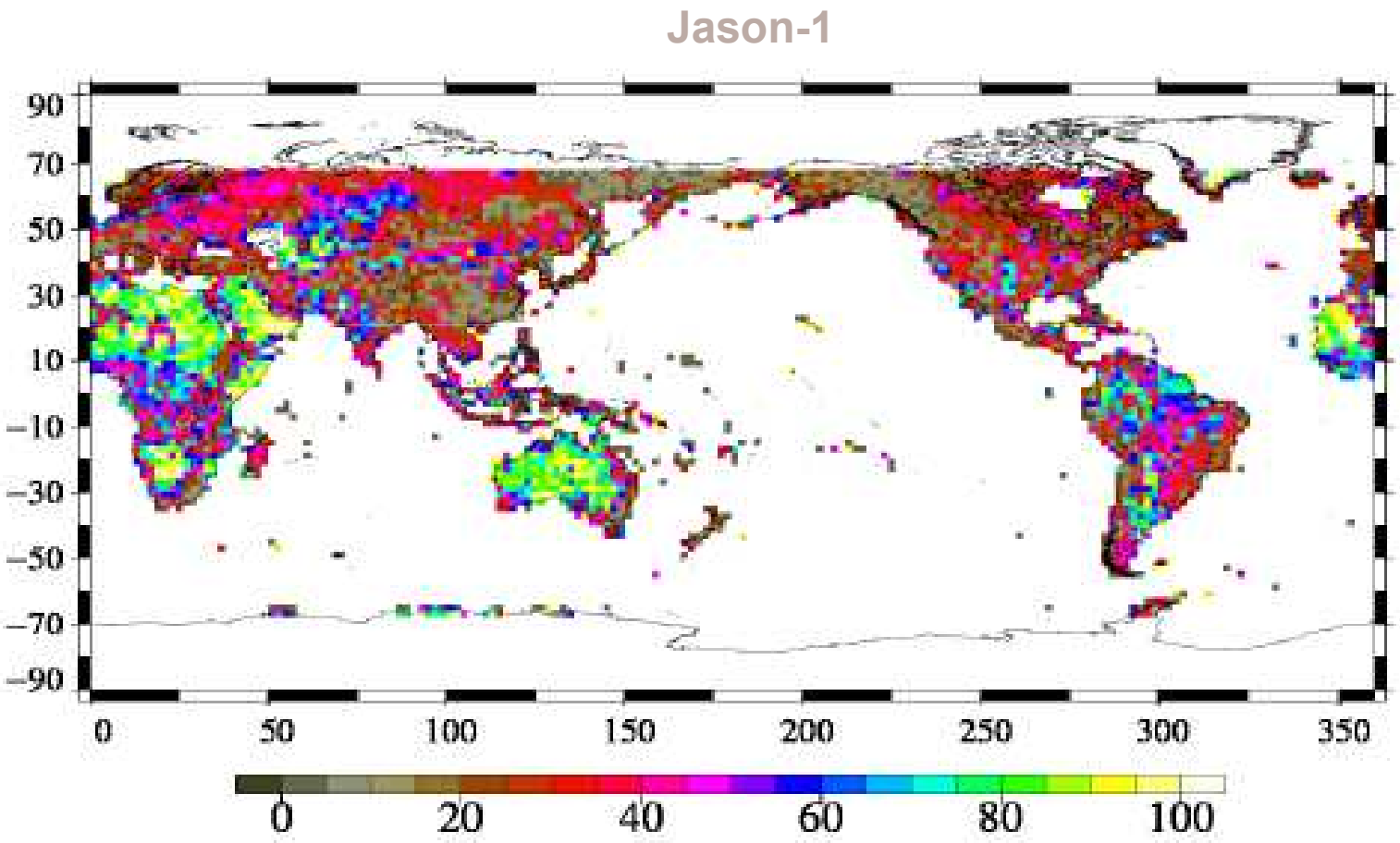
Data availability over land

- Few measurements available over the land



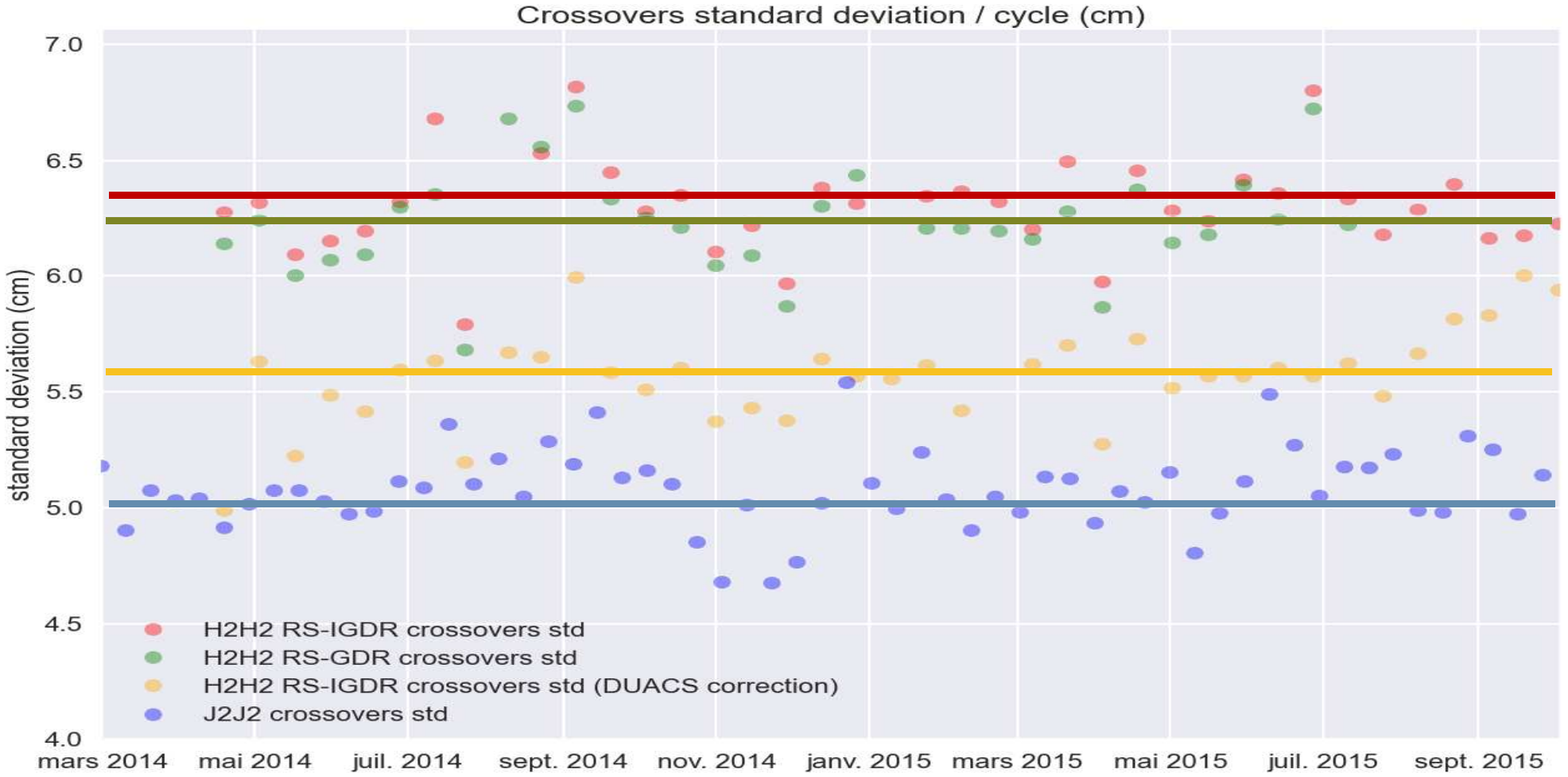
Data availability over land

- Results are comparable with Jason-1 performances



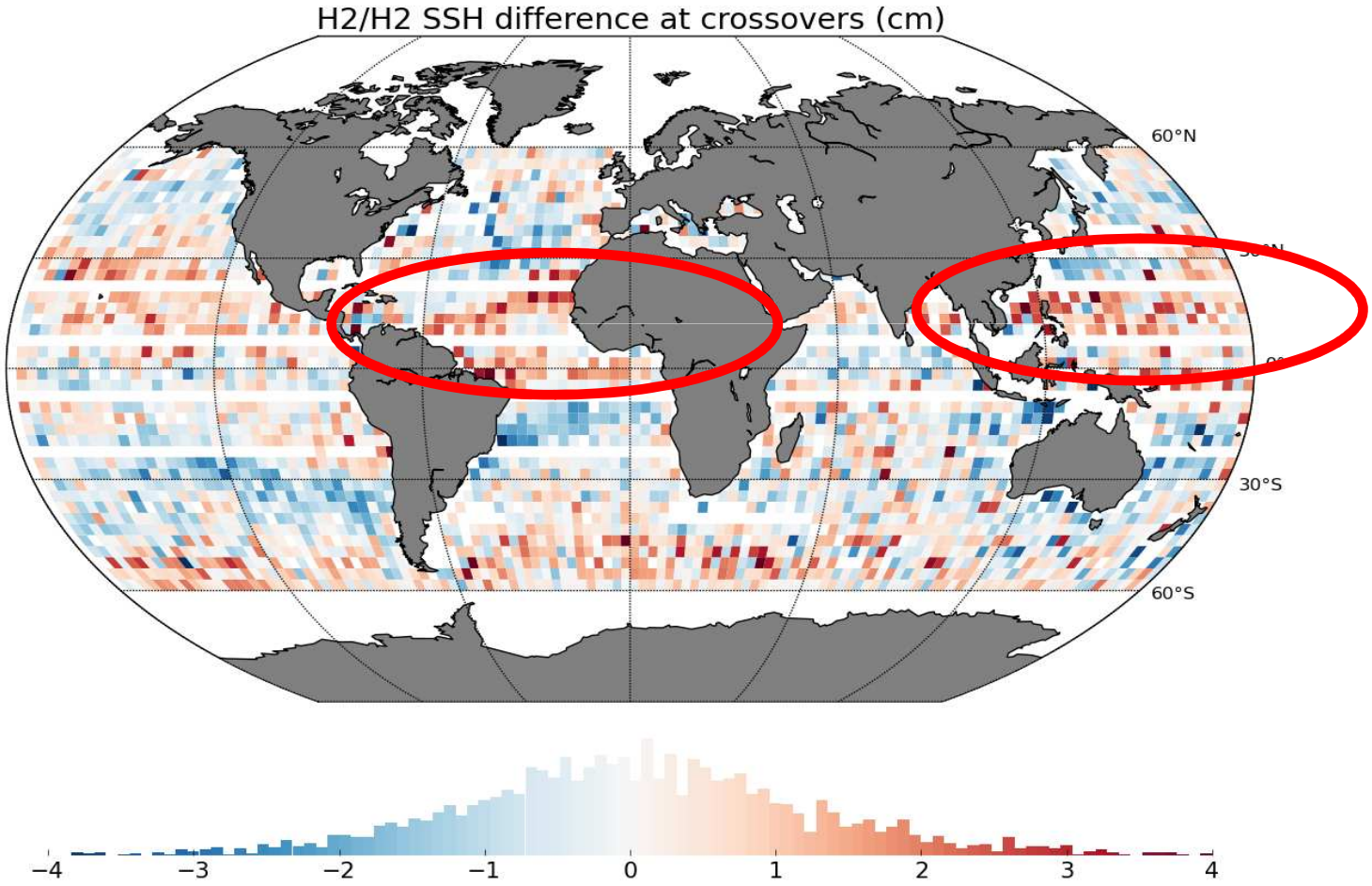
Sea-level performances: Mono-mission Crossovers

- SSH errors at crossovers traduce the good performances of Hy-2a altimeter. GDR products show a good improvement of the data quality. Using the DUACS cross-calibration (HY2 SLA is set to JA2 values) correction, performances are improved and closed to JA2



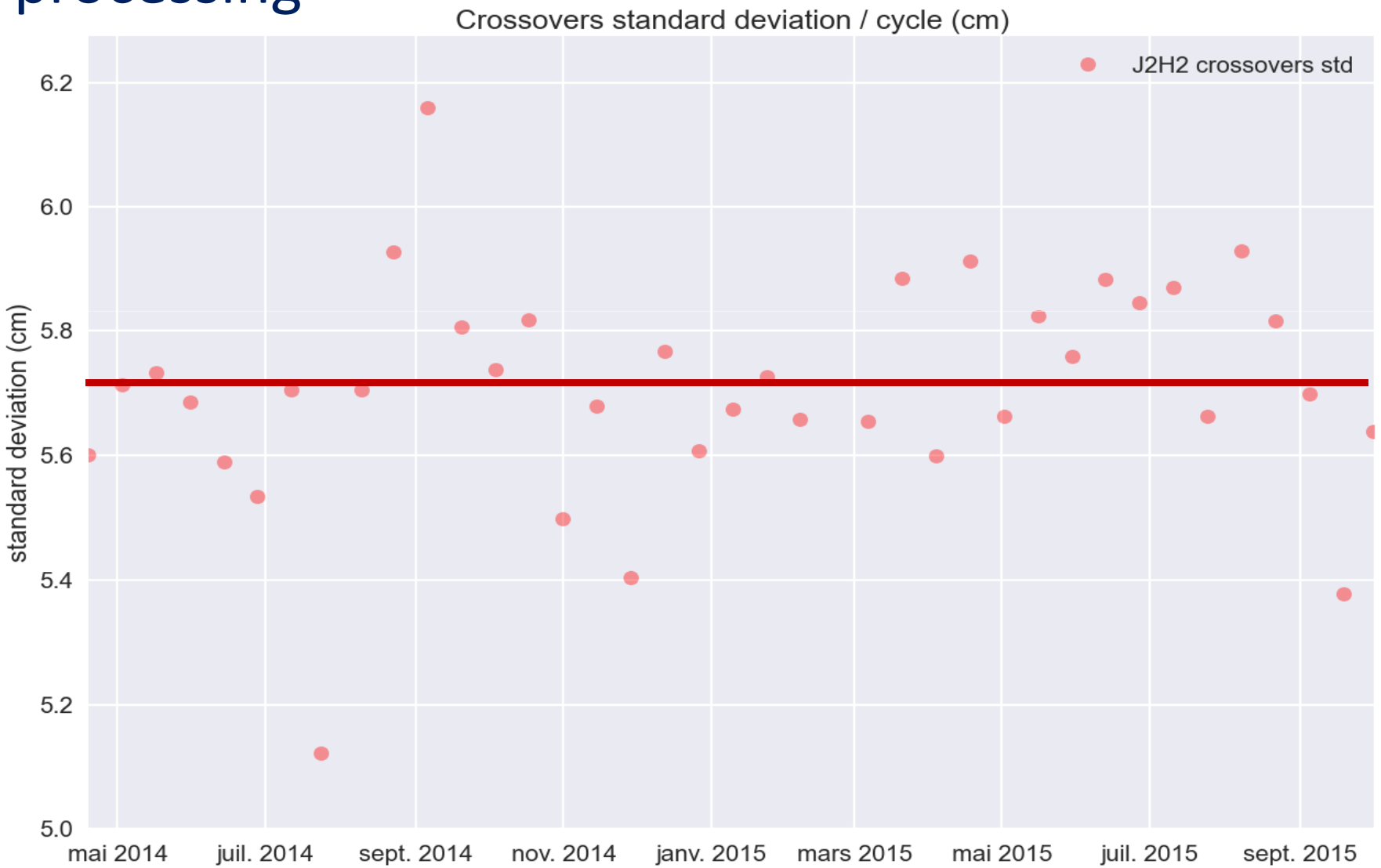
Sea-level performances: Mono-mission Crossovers

- Remaining geophysical patches are still evidence at Xovers



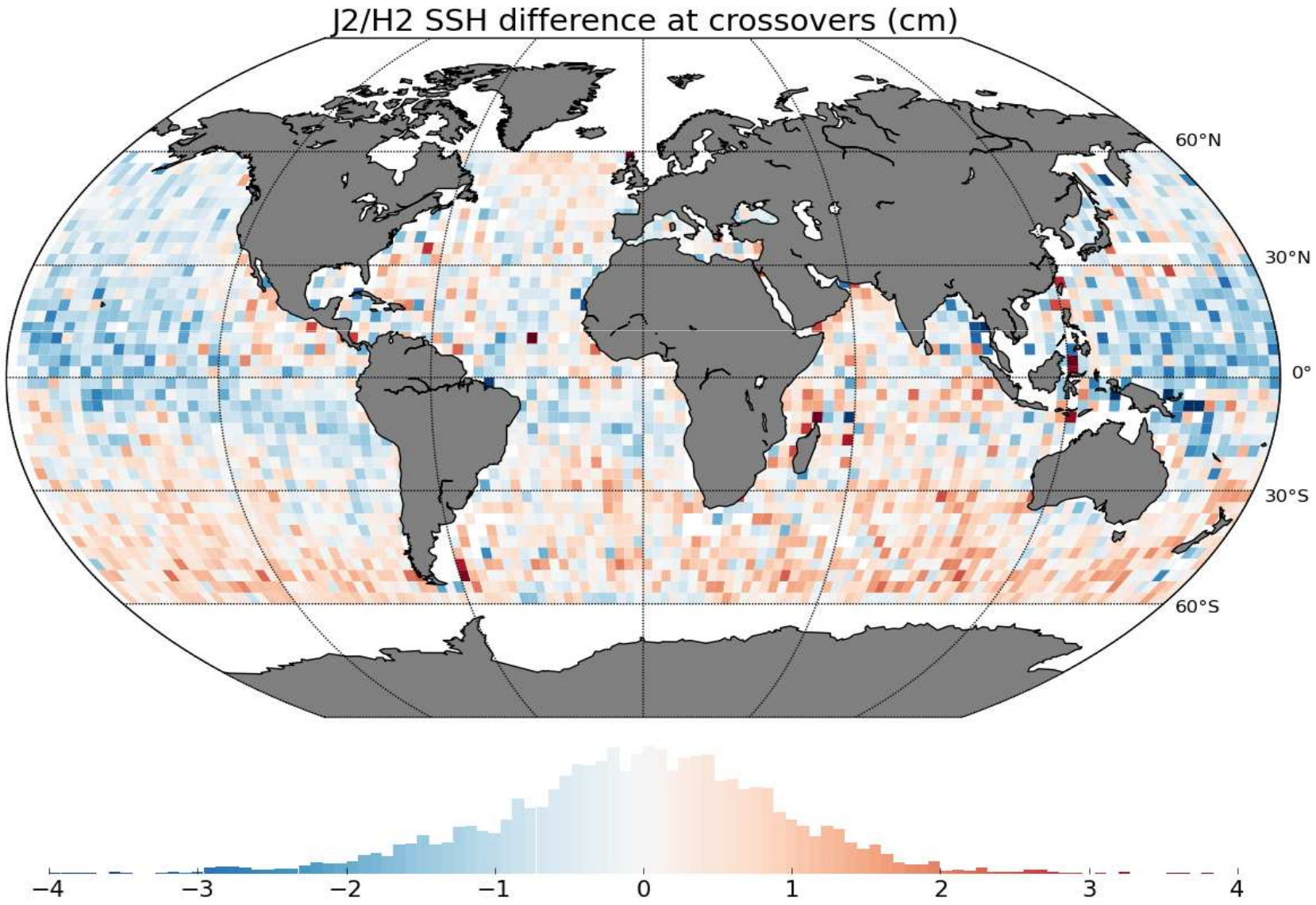
Sea-level performances: Multi-mission Crossovers

- Good JA2 / HY2 cross over metrics after DUACS processing



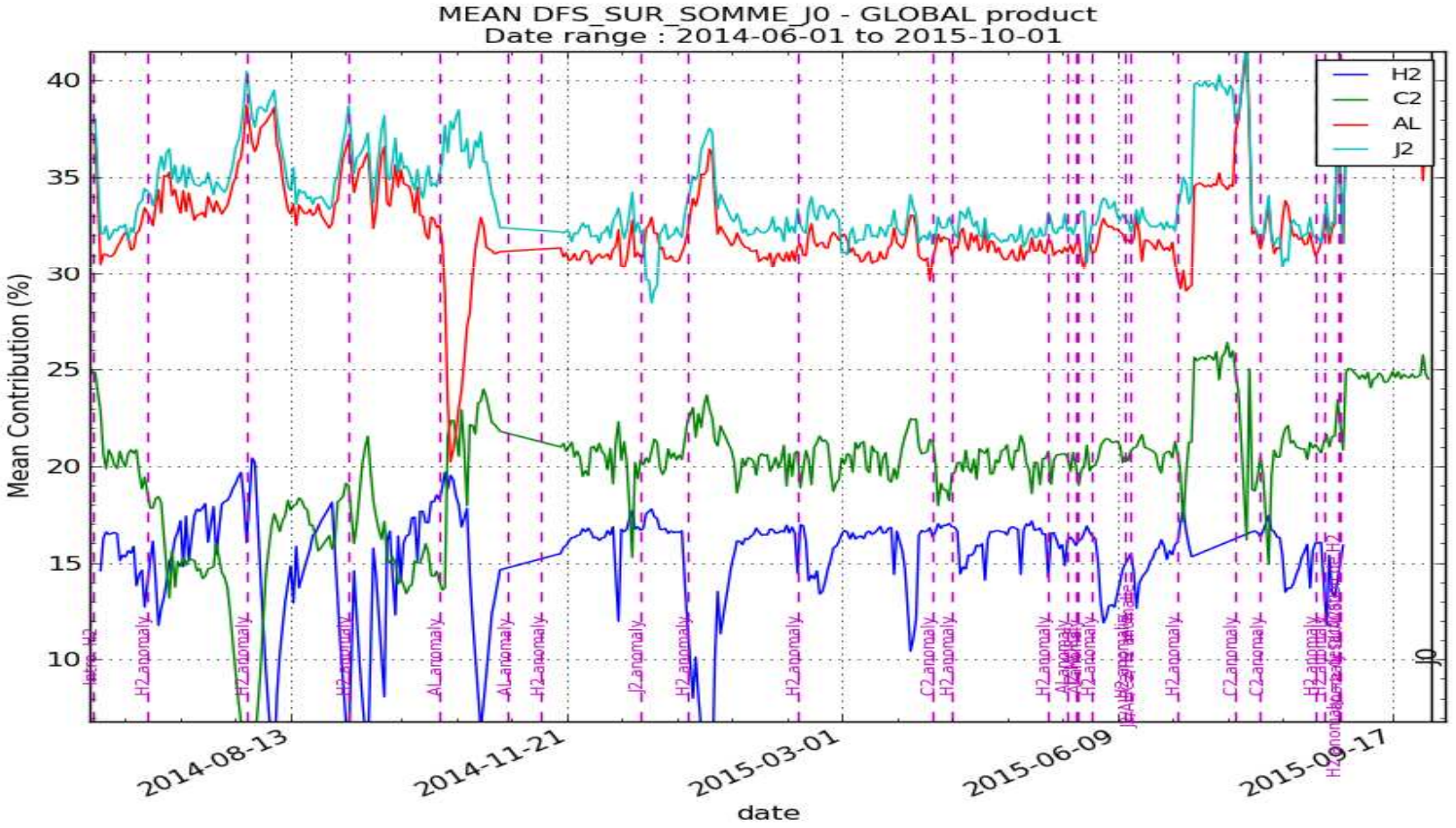
Sea-level performances: Multi-mission Crossovers

- Without any significant geographical bias.



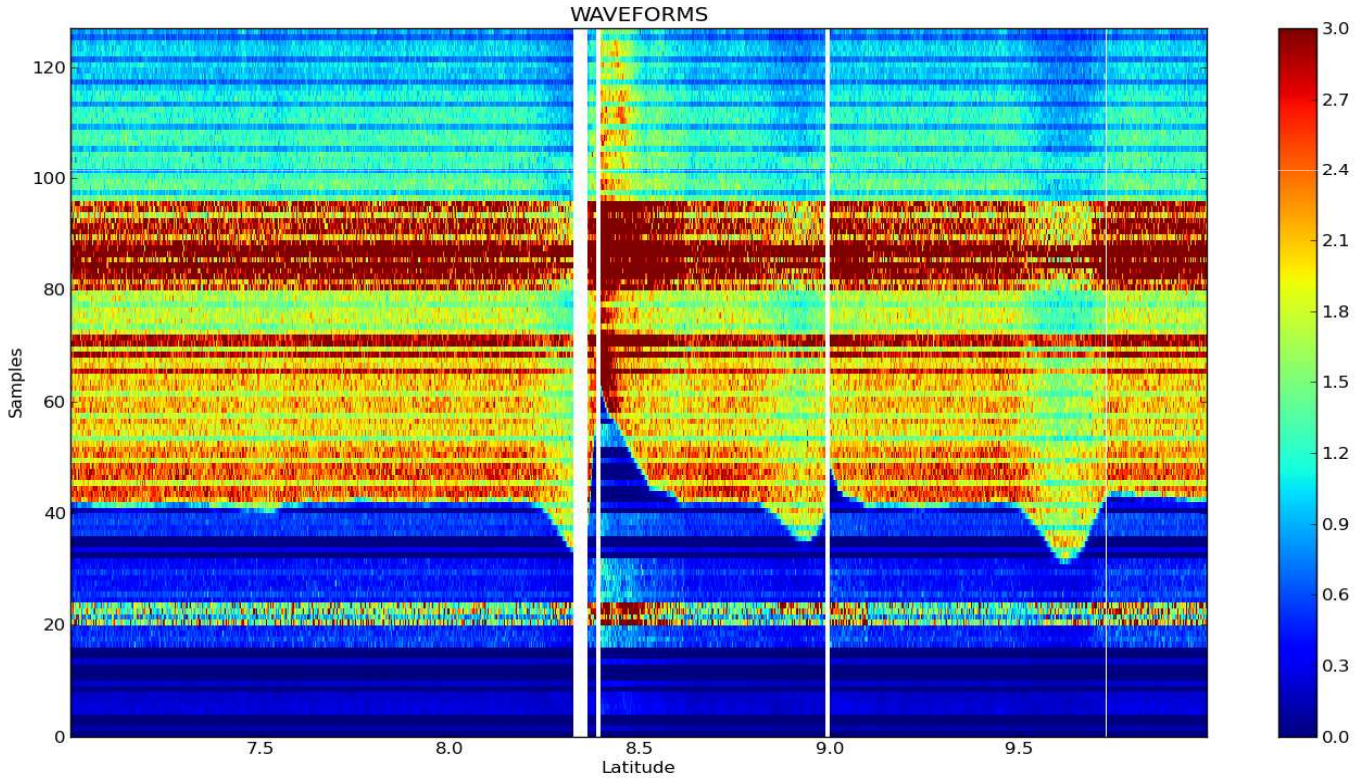
HY2 inside DUACS

- About 15% of the information is provided by HY2, and 0% since several weeks …



Issues during summer break

- Due to several incidents (ground segment or telemetry) impacting the waveform computation and thus the DUACS production, Hy-2A has been deactivate. Analyses of MLE4 model misfit have been implemented in the HPP to avoid these problems. Hy-2a will be back in DUACS system soon



Conclusion and perspectives

- HY2 will remain processed on DUACS side in 2016

- If new data set are available (Jason-3, Sentinel-3A) the Hy-2A contribution to DUACS production will become quite low. If the HY2 mission quality is not stable, the mission could be removed from DUACS. But the mission could also use soon a gravity orbit (NSOAS personal communication) thus of interest for MSS and gravimetry applications.

- Further improvements might be implemented (C band, long term analysis, radiometer wet correction, SWH, wind, …) but would require additional input information from NSOAS (unlikely …)