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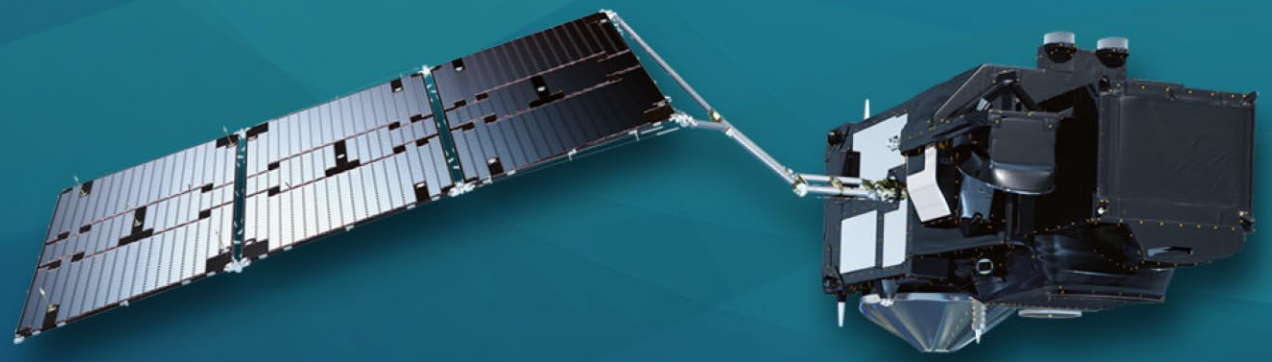


9th Sentinel-3 Validation Team meeting 2026

30 March–01 April 2026 | ESA–ESRIN | Frascati (Rome), Italy

Wrap-up Ocean Colour

S3VT-OC teams

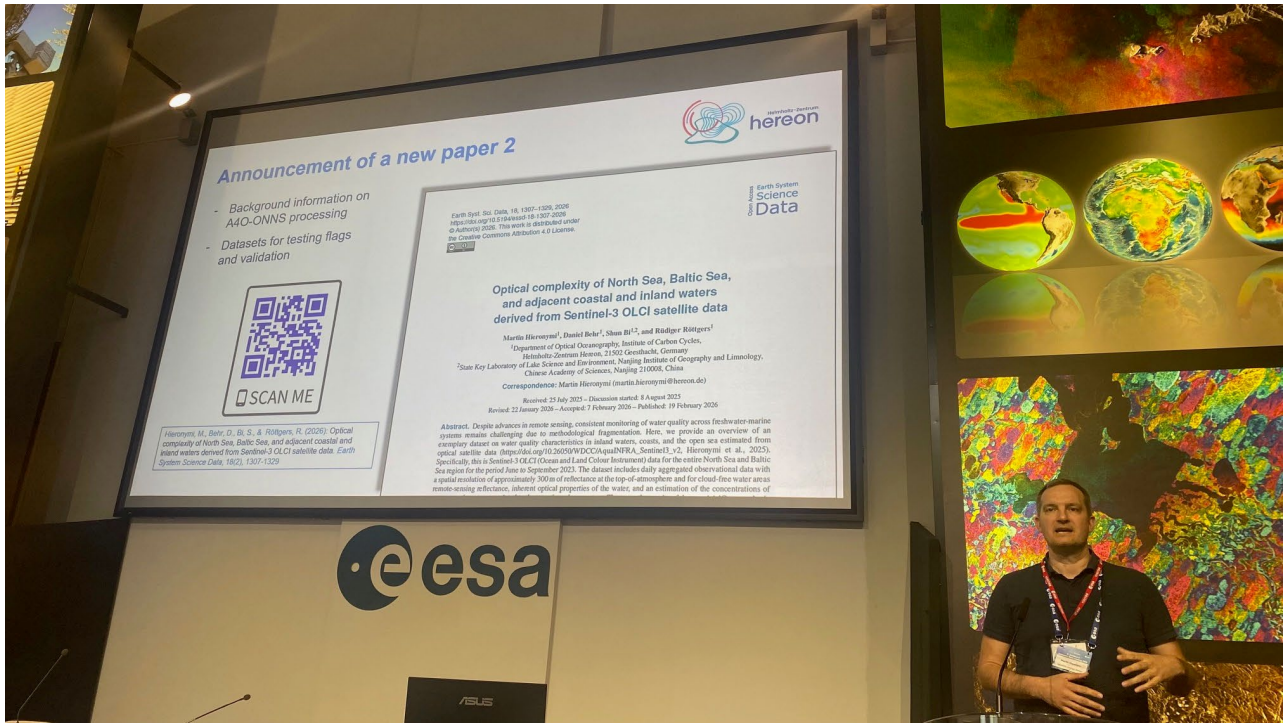
Ewa Kwiatkowska, EUMETSAT

OLCI Ocean Colour sessions

Very stimulating presentations and discussions

Sessions

- Level-2 Water OLCI validations
- Level-2 Water new Collection 4
- Multi-mission data sets and methods
- Fiducial Reference Measurements
- Coordination and stewardship of in situ measurements for validation and algorithm development
- Joint writing of conclusions and recommendations



S3VT-OC sessions provided critical insight into

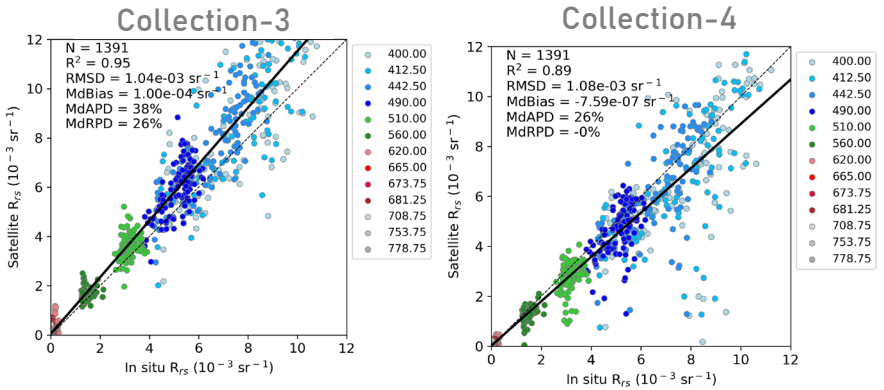
- Performance of OLCI Water products at different regional scales and Optical Water Types from experts from these specific regions
- Collaborations on validations and in situ FRM data
- New algorithm developments and ideas, products, validation methods, tools in the Community and across Agencies
- Real OLCI applications (e.g. CMEMS product portfolio, coccolithophore bloom phenology, climate quality time series)

OLCI Collection 4 Water initial product performance results

Remote Sensing Reflectance: mixed results at regional validations

- Clear waters at Lampedusa – typically improved performance at most bands
- Moderately complex waters at Venice Acqua Alta Oceanographic Tower – typically improved performance at most bands
- Lakes (Garda, Trasimeno) – mixed results with degraded values in the red
- Highly absorbing waters of Baltic Sea – more low bias, need to check coccolithophore retrievals
- Highly turbid waters Oostende station – no improvement and more low bias
- Extremely turbid waters Rio de la Plata – not a big difference in mean statistics but data are less scattered, primarily driven by the new BRDF correction

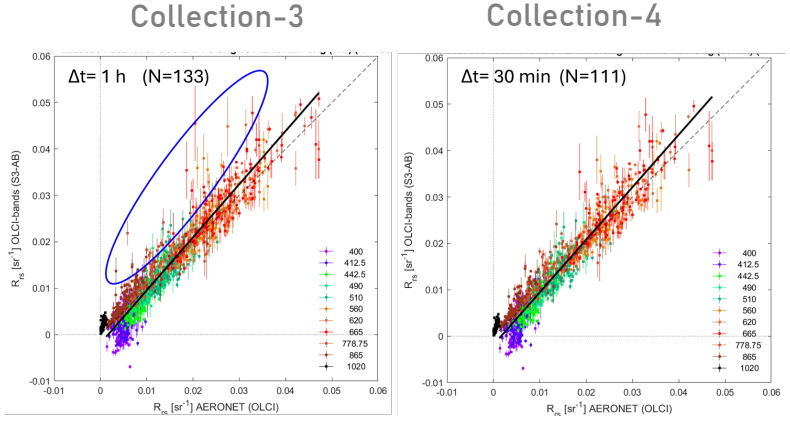
S3A and S3B OLCI Clear waters at Lampedusa



Other retrieval characteristics

- Retrievals available in some lakes, when missing before
- Significant improvement in camera discontinuities
- Additional retrievals in the HIGHGLINT conditions with extending the OLCI coverage and numbers of matchups
- Meaningful differences in chlorophyll due to the new chl algorithm, but still to be validated
- Isolated low Rrs retrievals tentatively attributed to absorbing aerosols and already corrected in v. 4.01
- Coastal staircase along the Belgian coast to be revised as an OLCI L1 activity

S3A and S3B OLCI Extremely turbid waters Rio de la Plata



Need for more validations across many regions and Optical Water Types as well as globally

S3VT-OC Water algorithm and cal/val recommendations

Continuing work is required on L2 Water processing with specific focus on atmospheric correction and water retrievals in highly turbid and absorbing waters

Lack of in situ FRM for satellite cal/val hinders product performance

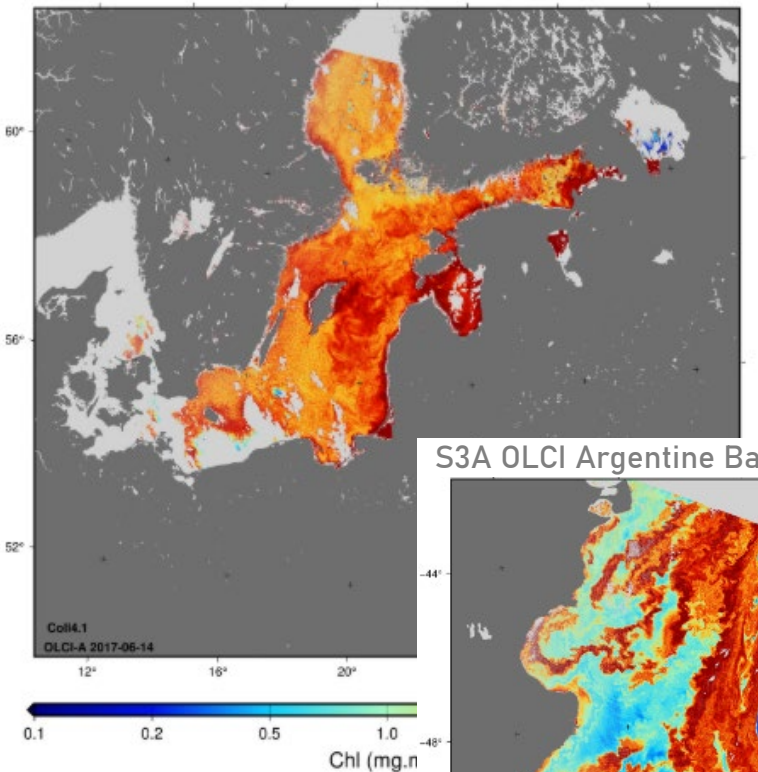
- In situ FRM required for satellite product validation and algorithm development to improve satellite products

In situ FRM and FRM4SOC effort is extremely successful and crucial to the community and should be continued

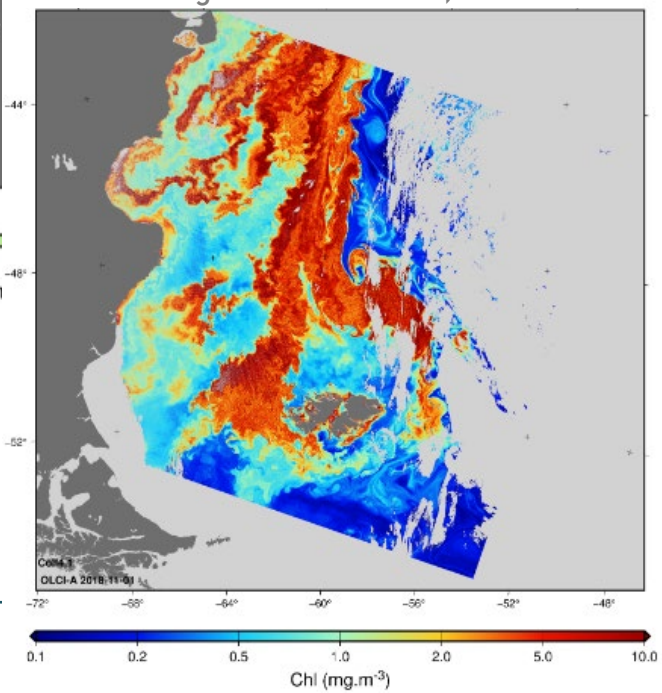
- Guidelines, tools, community training, community FRM services, work with radiometer manufacturers
- We cannot lose the momentum and jeopardise the achievements

…but many in situ activities exist across various European projects with no consolidated data access and no long-term stewardship

S3A OLCI Baltic Sea Chl. 14 June 2017



S3A OLCI Argentine Basin Chl, 01 Nov 2018



S3VT-OC In Situ FRM and mission recommendations

Acquisition of in situ FRM data requires an active task / responsibility for collecting the data across the community

- Start with coordinating across this S3VT community, support standardisation and unite different teams
- Develop procedures and rules for in situ FRM stewardship: infrastructure (here Copernicus OC-DB), acknowledgements, original links
- Invest in networks, try to make people involved, standardised instrumentation and procedures, e.g. AERONET-OC, HYPERNETS
- Require to deliver the in situ FRM data which use the freely provided resources, e.g. guidelines, tools, processors
- Some in situ FRM data access is time sensitive
- Coordinate on in situ FRM locations, e.g. near the shore for adjacency effects
- Need information about data quality, instrument calibration / characterisation, possibility to reprocess

Need for the continued support of in situ FRM collection for the S3 Constellation

Highlight OLCI Water products – 10 years of the mission paper

S3VT would like to express support for continuing S3A optical operations after S3C launch and commissioning