

3rd CoastColour User Consultation Meeting

Lisbon, 19-20 October 2011

Status of CoastColour in-situ data base

&

A first validation of CC products in Tagus Estuary

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Status of CoastColour in situ data base

- Sites and Users
- Available data for the project
- Surface data, 2005-2010

A first validation of CC products in Tagus Estuary

- Location
- In-situ available data
- CCMERIS data
- In-situ vs CCMERIS (TSM and Chla)
- Other studies

Conclusions / Future

S1: PML * IFREMER * NIVA * GKSS * UNICAN * IOW
* EMECO * Mar.Instit_Ireland * NOMAD_SeaBass (9)

S4: CSIC * NOMAD (2)

S2: IOW * NIVA (2)

S3: NIOF * HCMR * CSIC (3)

S7: NOAA * COAS_OSU (2)

S20: NOAA
COAS_OSU
NOMAD (3)

**S5 / S6 / S9 /
S17 / S23:**
NOMAD (1)

S8: UCSB * NOAA
* NOMAD (3)

S10: CSIR * NOMAD (2)

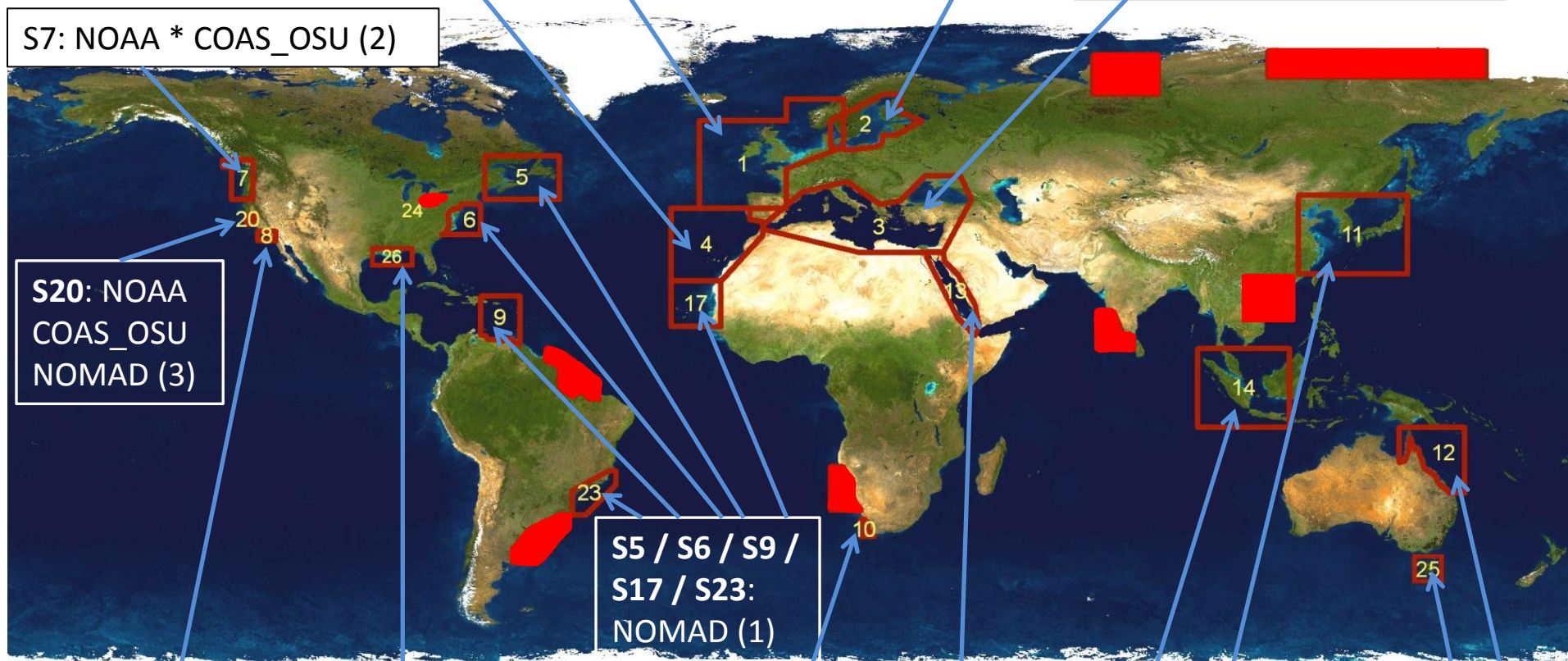
S13: NIOF (1)

S12 / S25: CSIRO (1)

S26: MSU * NOMAD (2)

S14: ITC * GRAS * NOMAD (3)

S11: JAXA * KORDI (2)



Background Image: Blue Marble © NASA

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19S and 21U

S10: CSIR * NOMAD (2)

S13: NIOF (1)

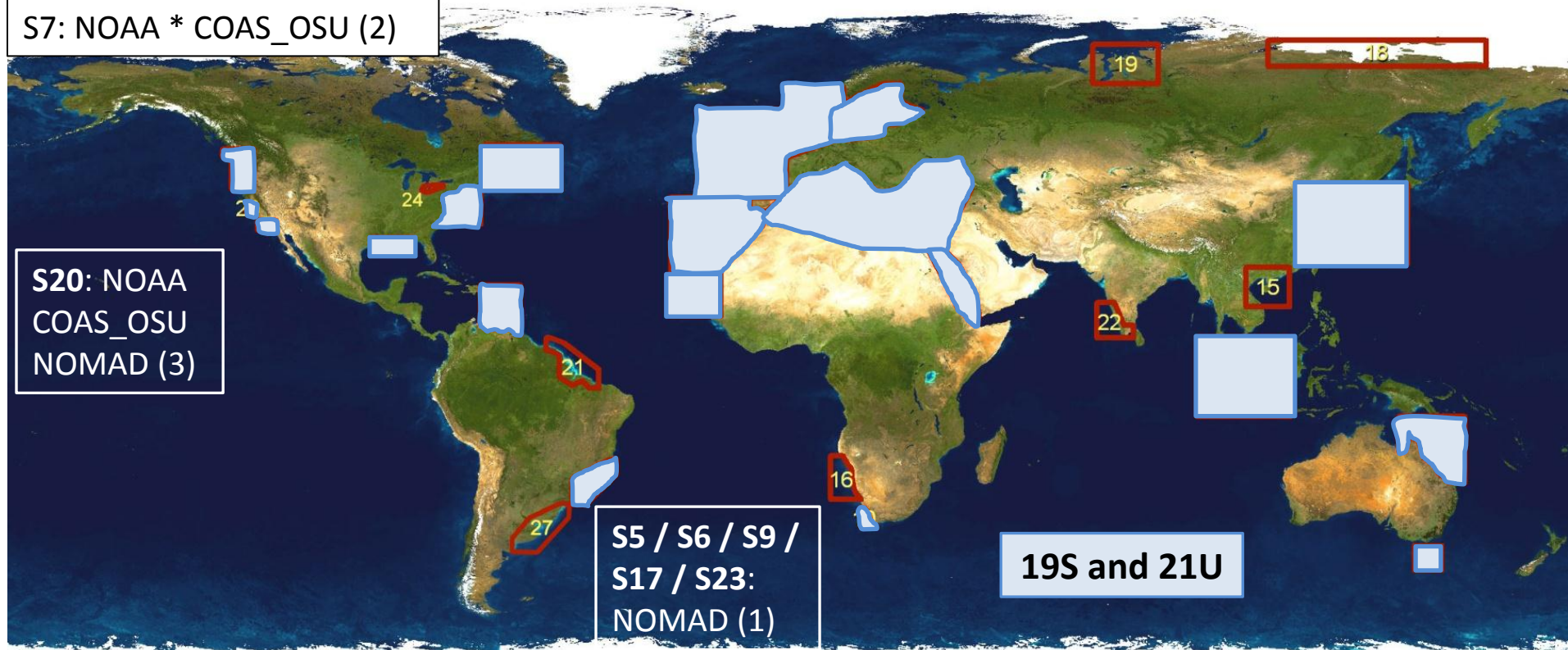
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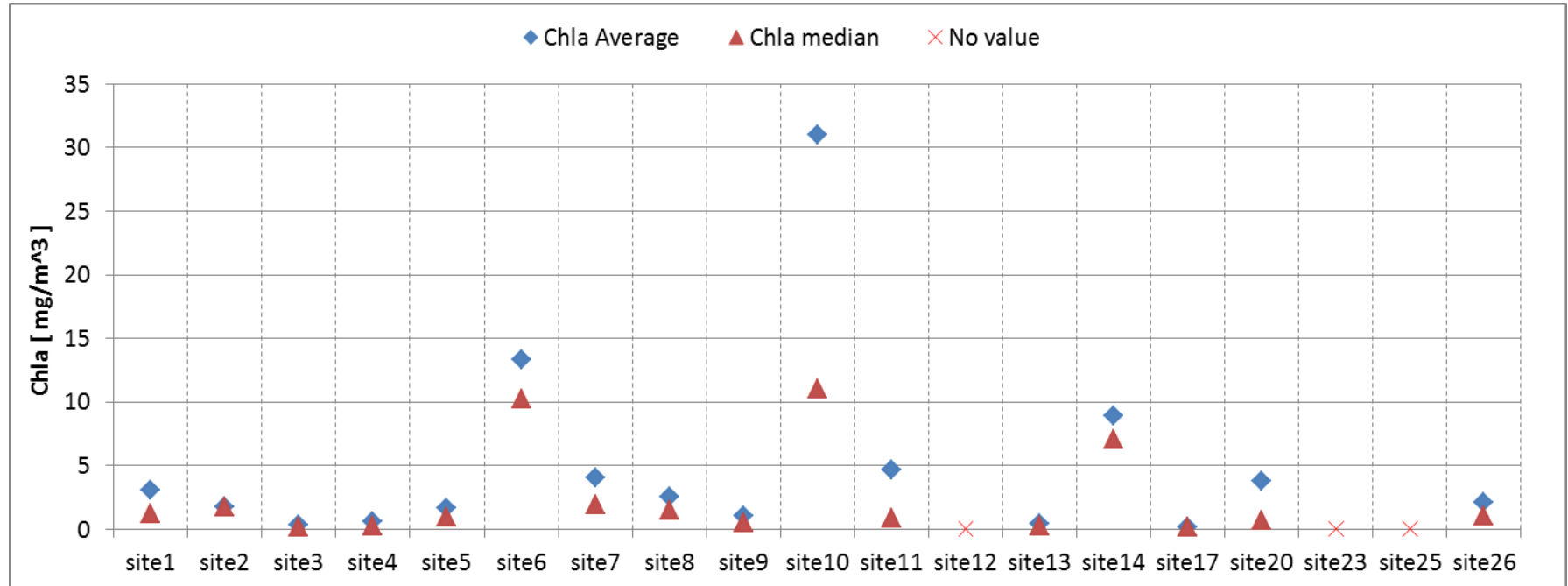
S14: ITC * GRAS * NOMAD (3)

S11: JAXA * KORDI (2)



- **Date:** 03-Mar-1997 to 31-Oct-2010
- **Time:** UTC (standardization)
- **Coordinates:** WGS84 (deg)
- **Products:**
 - ✓ standardization of variables
 - ✓ standardization of units
 - ✓ Quality control
 - METADATA;
 - RADIOMETRIC DATA;
 - IOP's;
 - BIOGEOCHEMICAL_OPTICAL_DATA
(also pigments PSC and PPC,
PHYTOPLANKTON
and HPLC products)

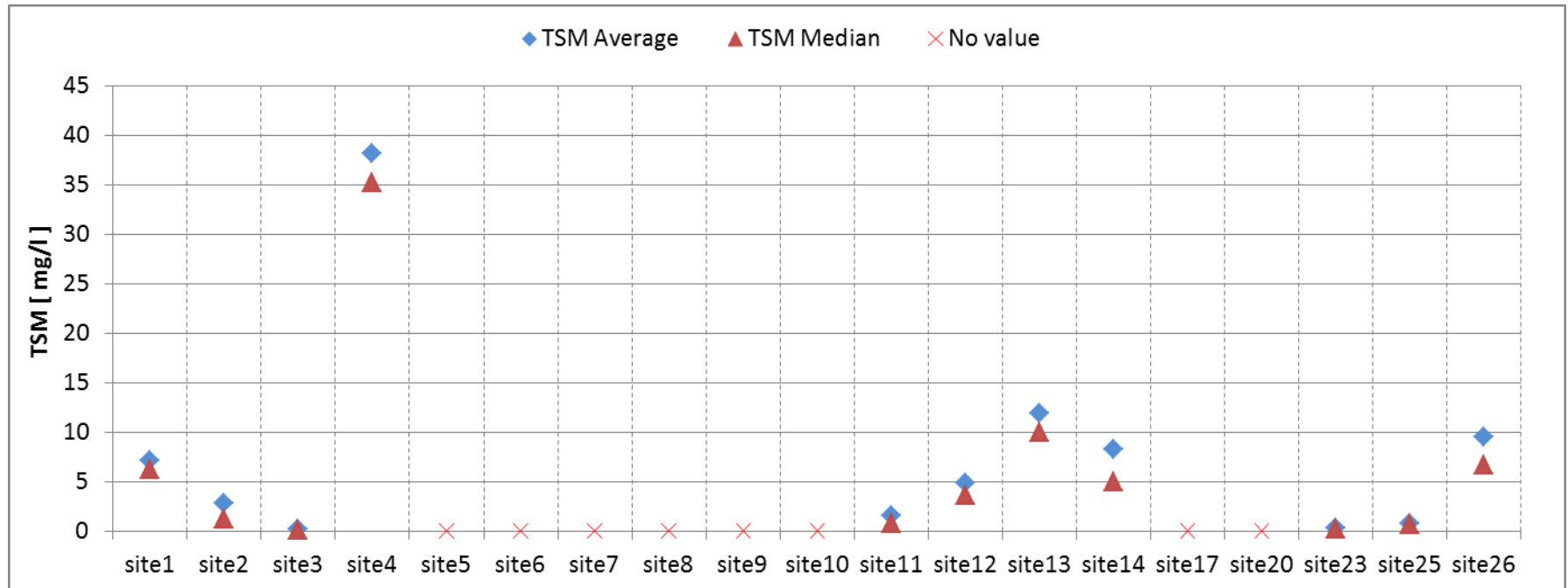
Chlorophyll a



Site 10 – Benguela (165 records; max.: 497mg/m³)

Site 20 – Central California (3766 records; max.: 1170mg/m³)

Total Suspended Matter (TSM)

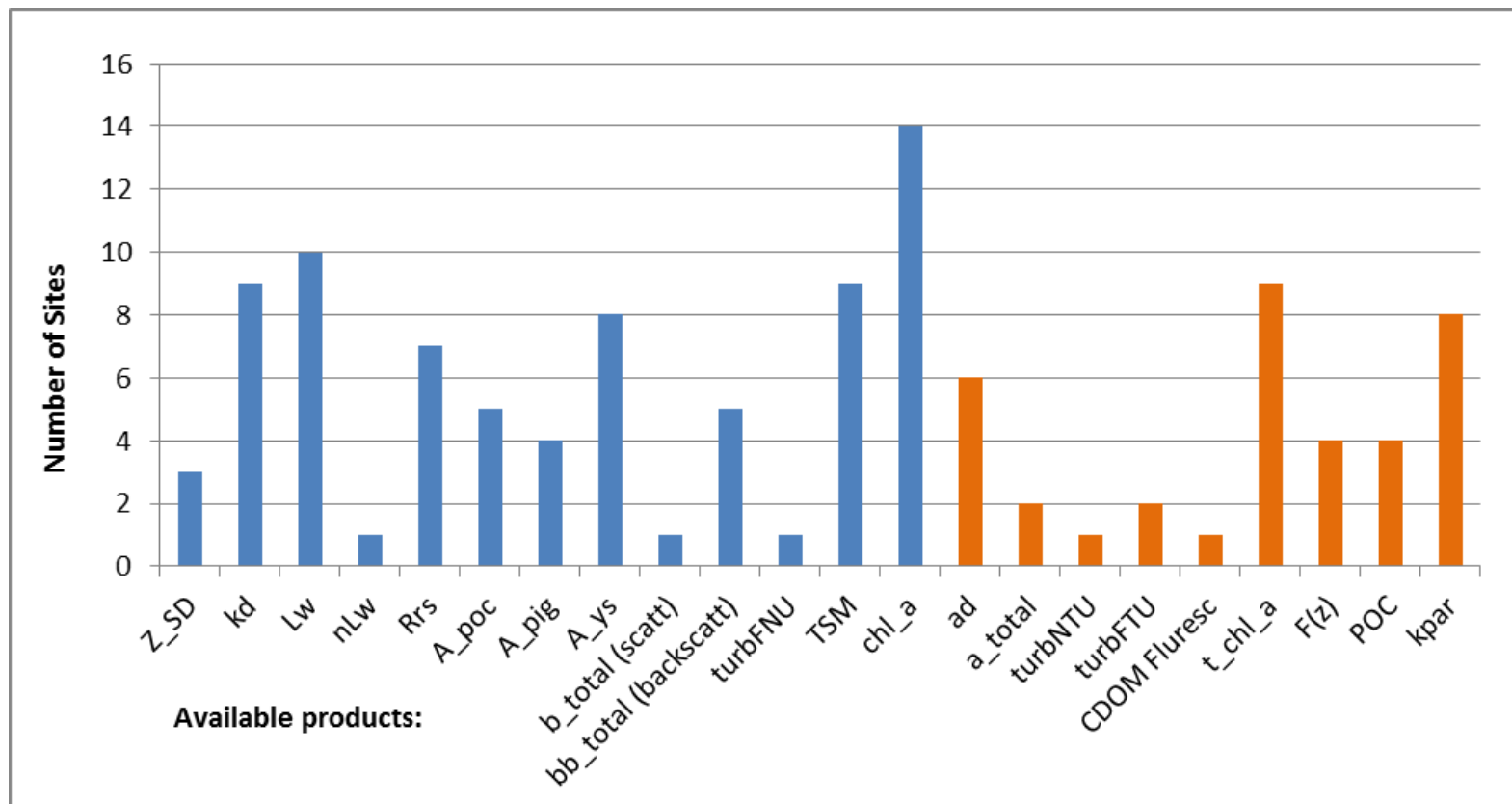


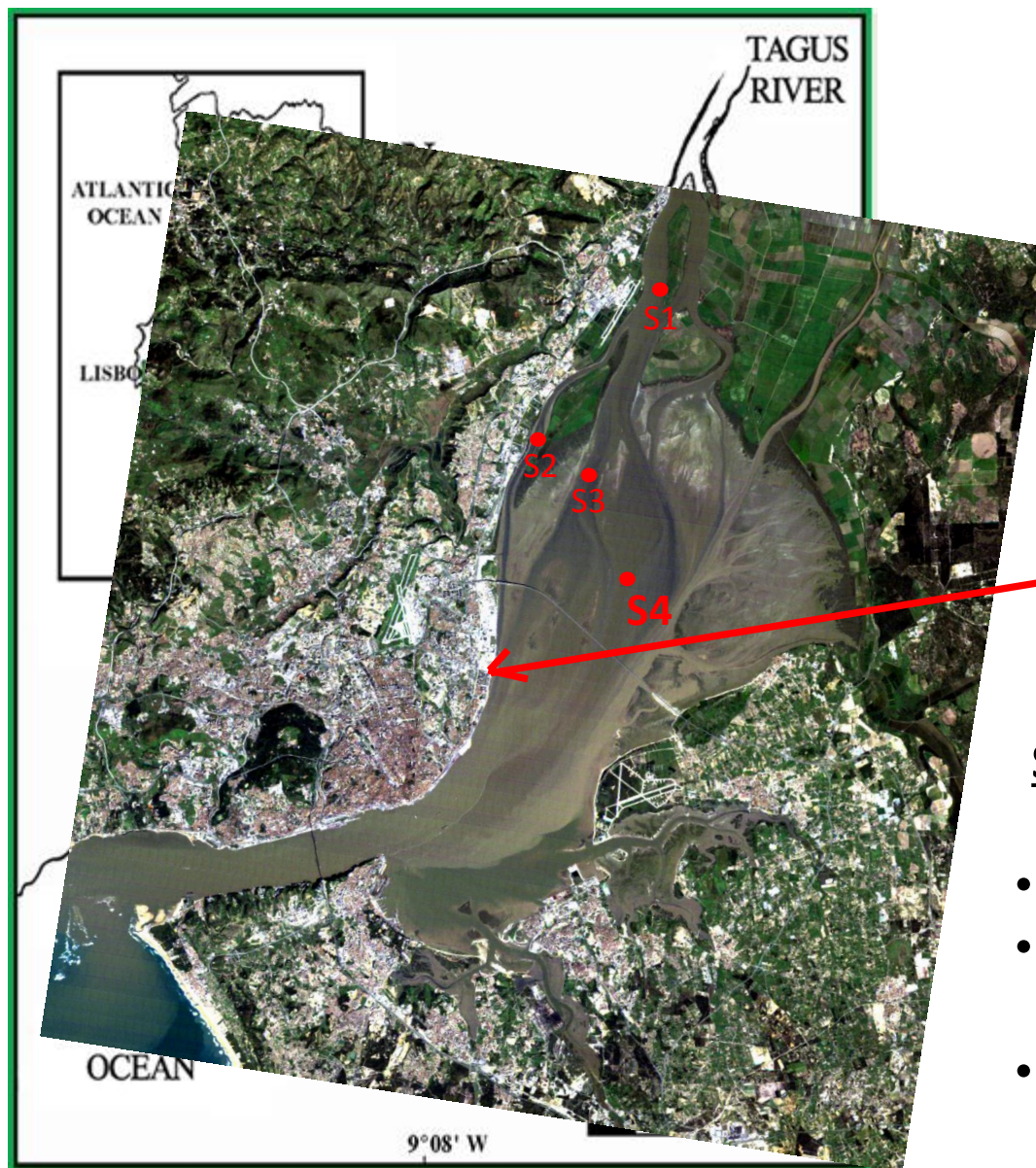
Site 4 – Morocco (670 records; max.:506mg/l)

Site 13 – Red Sea (time missing; 56 records; max.: 25mg/l)

Look For Match-ups (LFM) – Technical Note

- Date, Time and Coordinates information
- Date: 01-Jan-2005 to 31-Oct-2010
- Surface data only





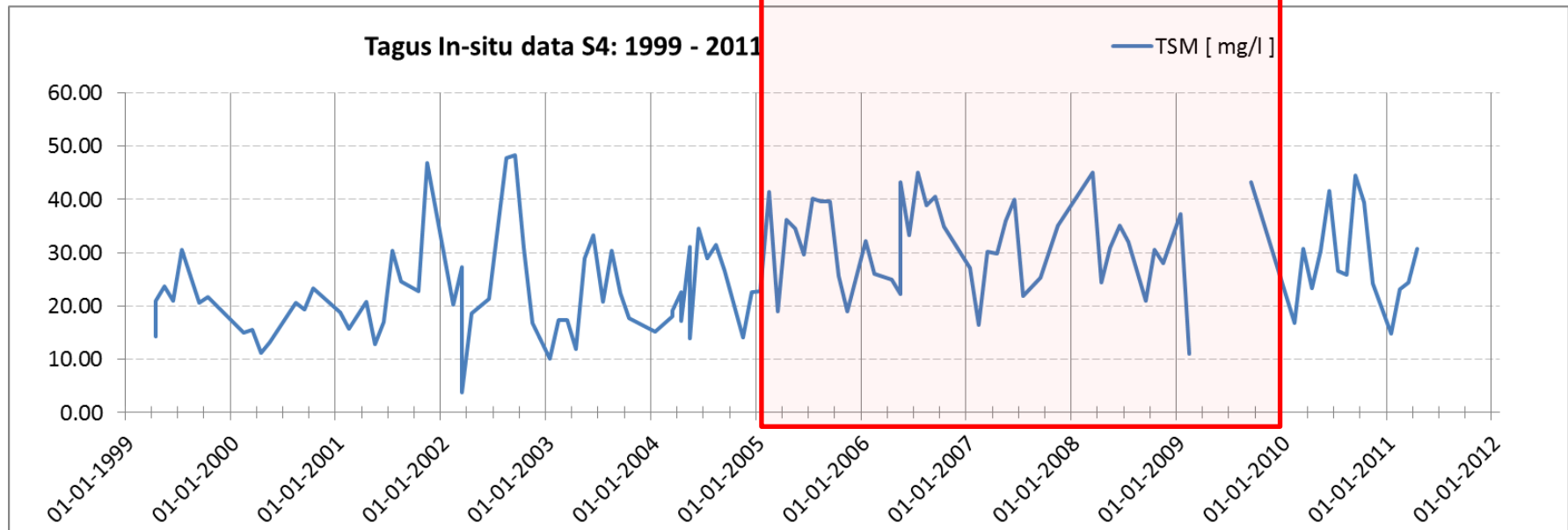
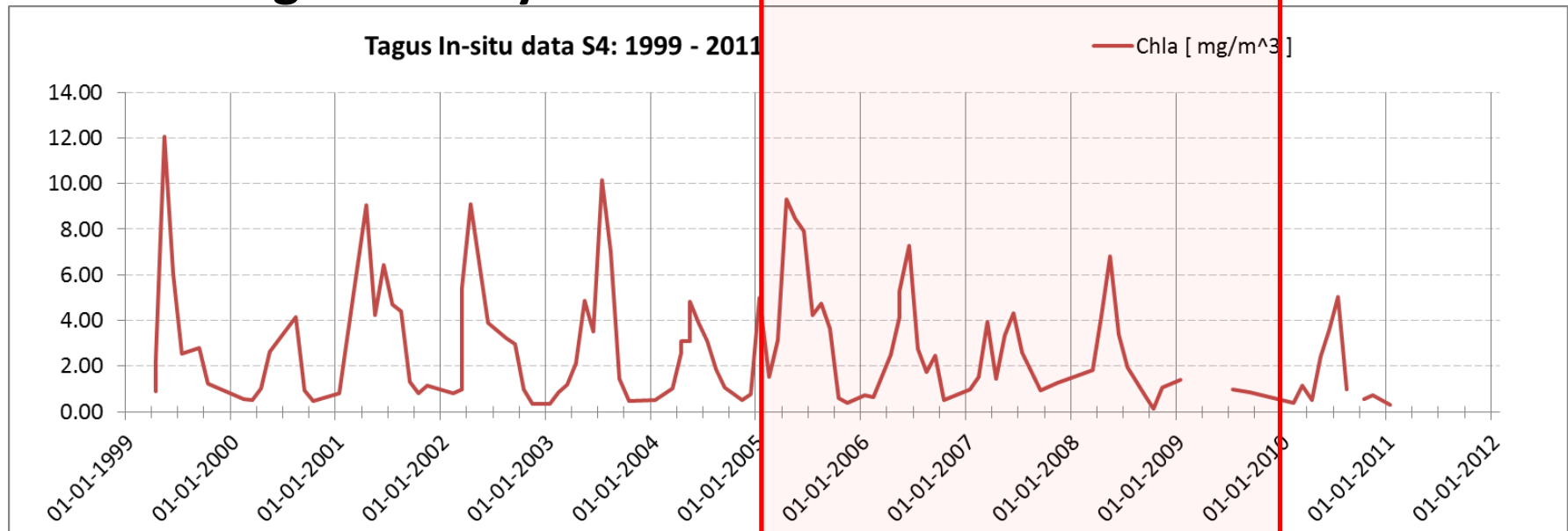
Station	Longitude [degrees_East]	Latitude [degrees_North]
1	-9.024164	38.877636
2	-9.077603	38.827128
3	-9.052675	38.821792
4	-9.041586	38.776606

We are here! 😊

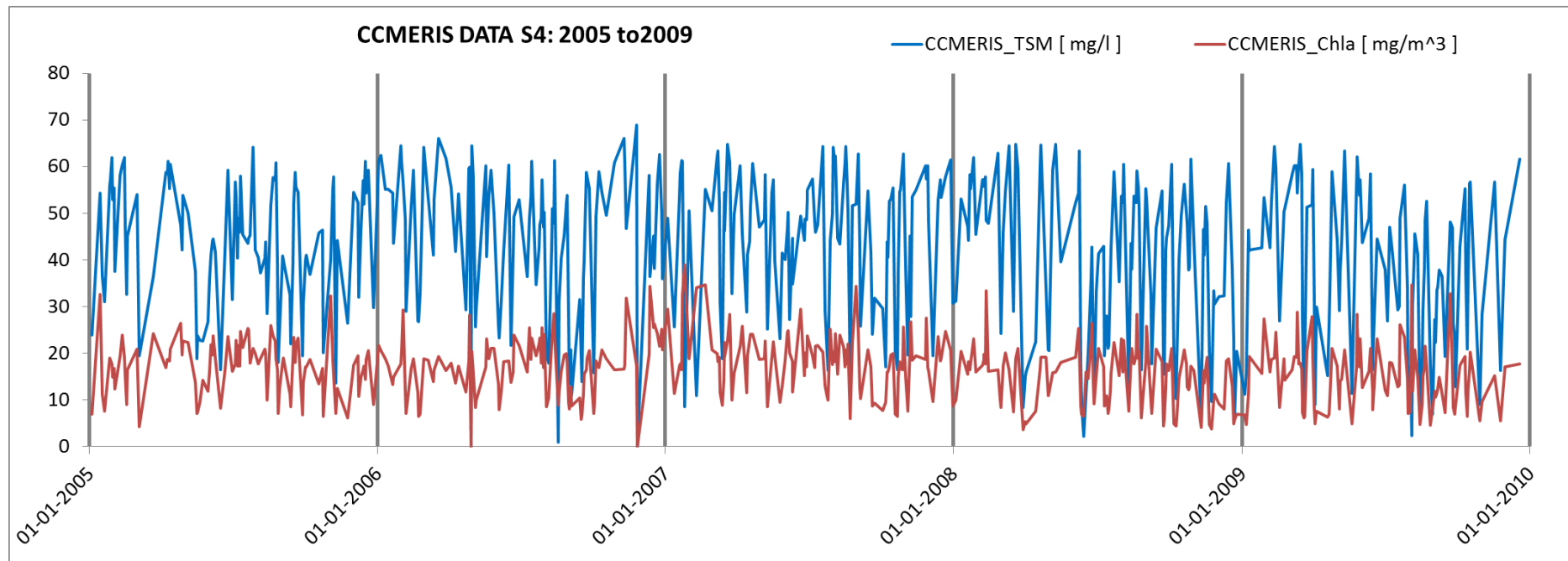
Station 4 has the best combination:

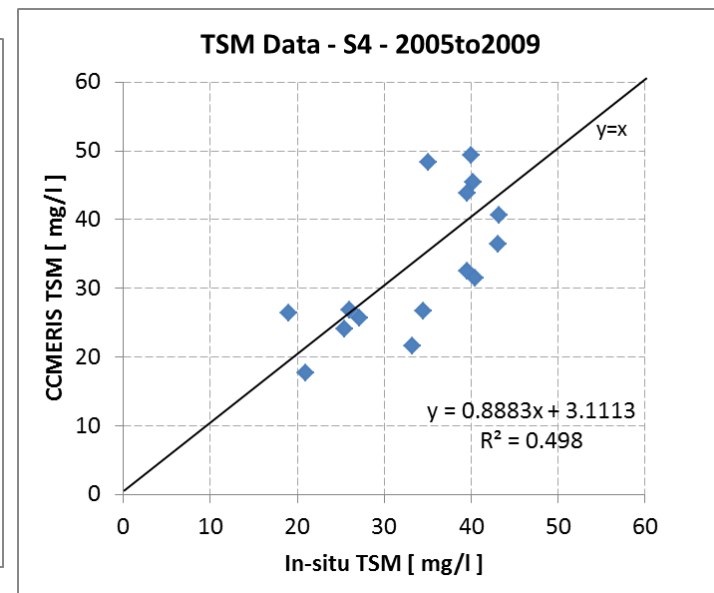
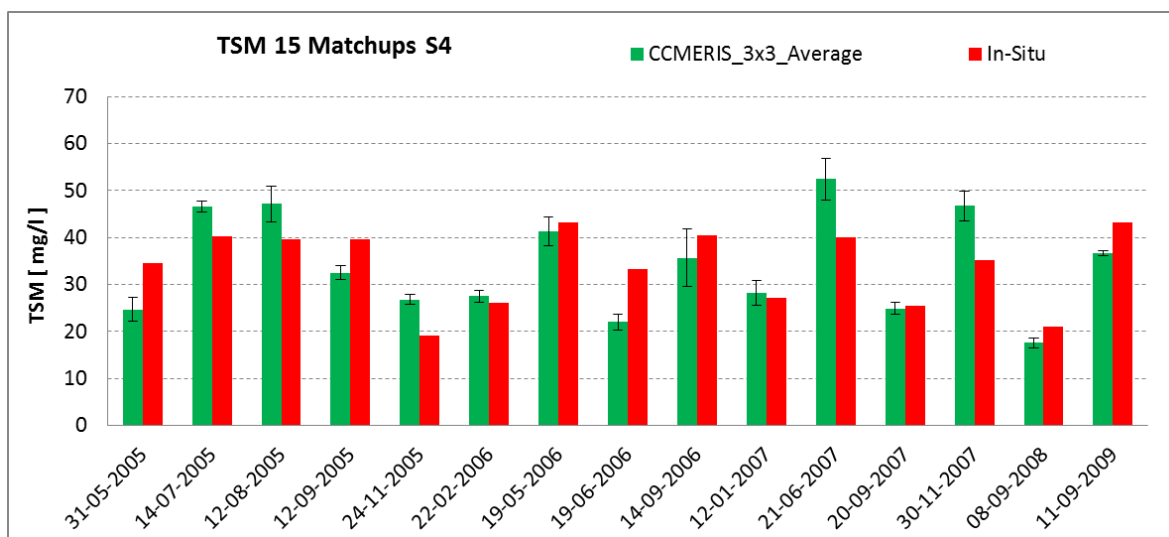
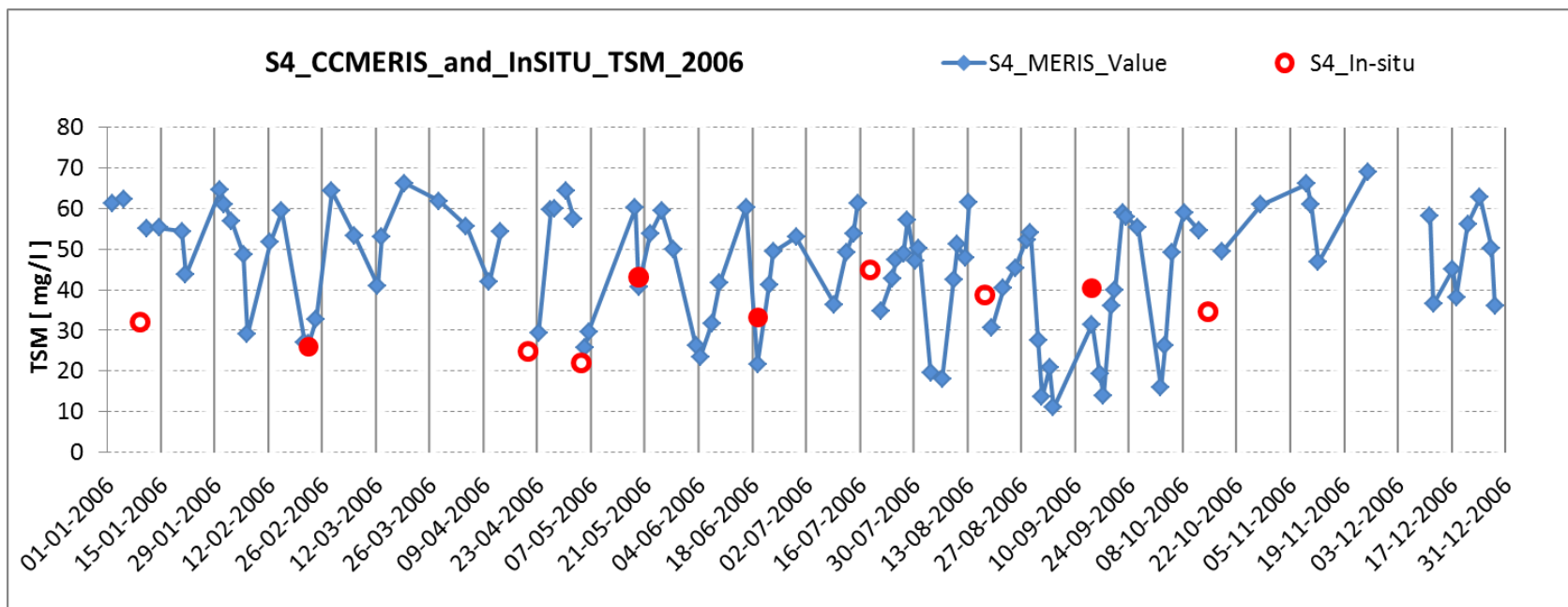
- Number of match-ups (15)
- 3x3 window coverage (14/15 has data in all the 9 pixels)
- Time difference between In-situ collection and Satellite passage (less than 3h)

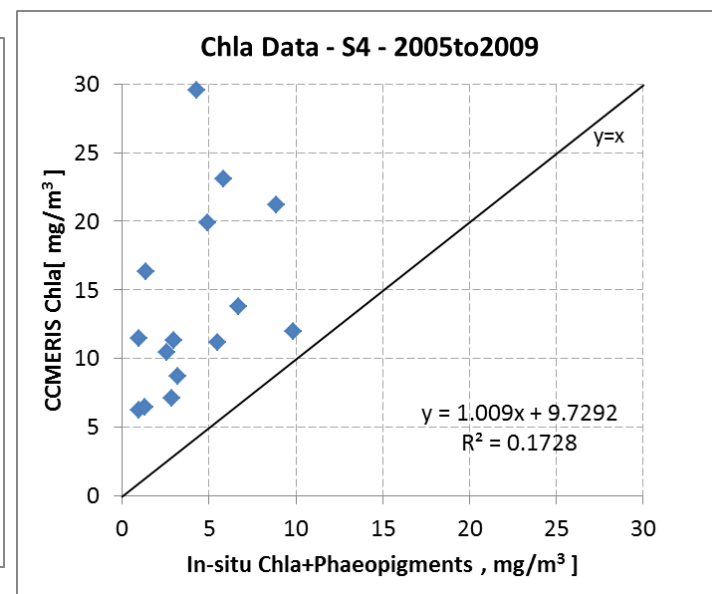
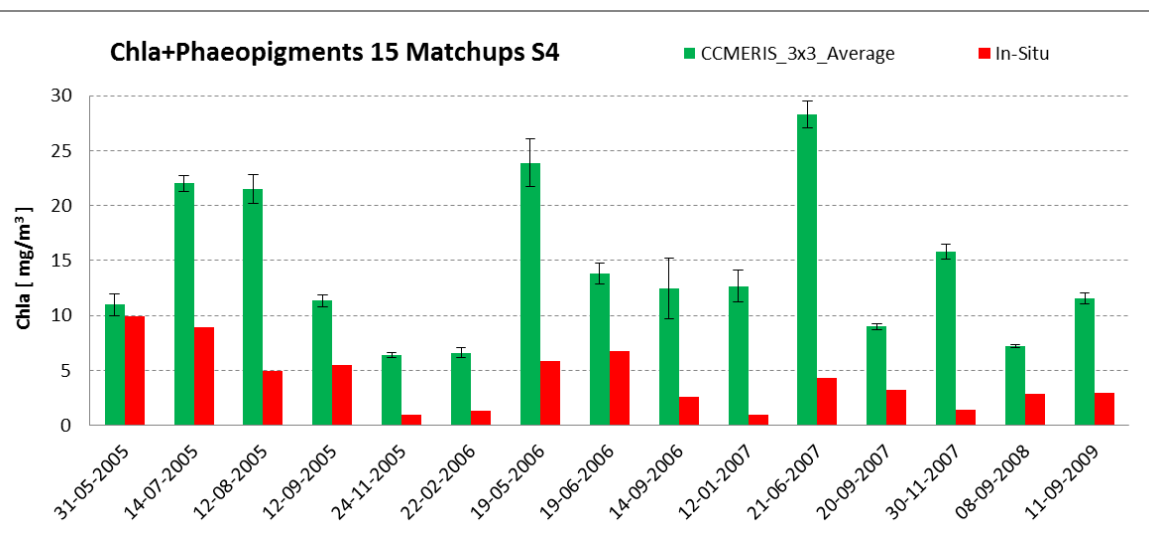
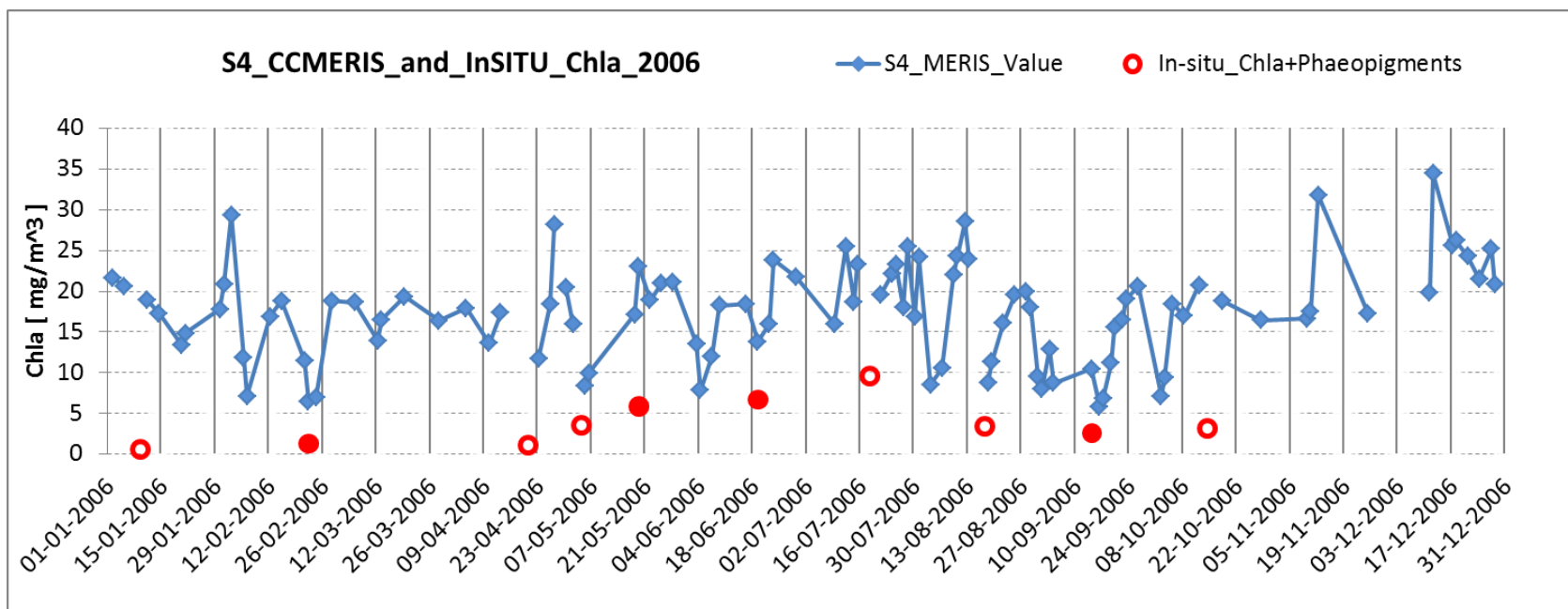
• In-situ Tagus Estuary Data



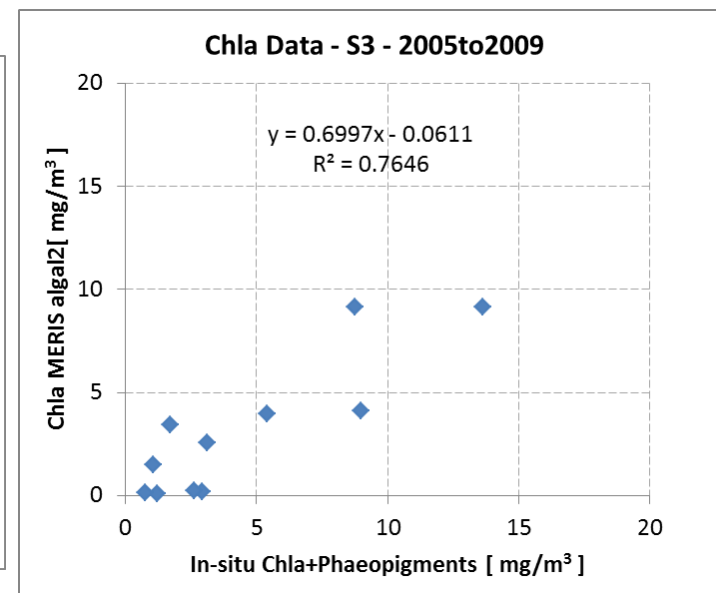
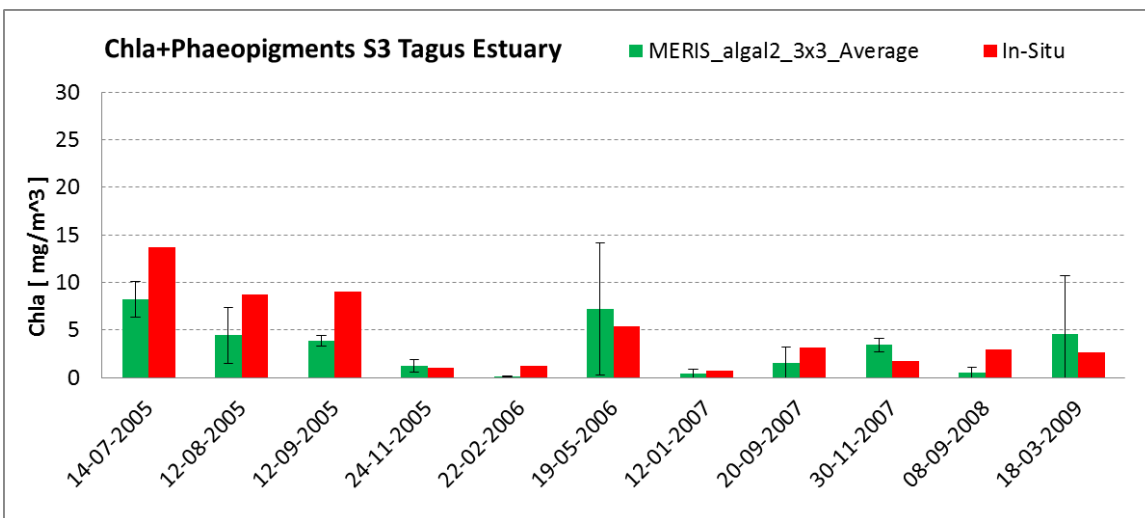
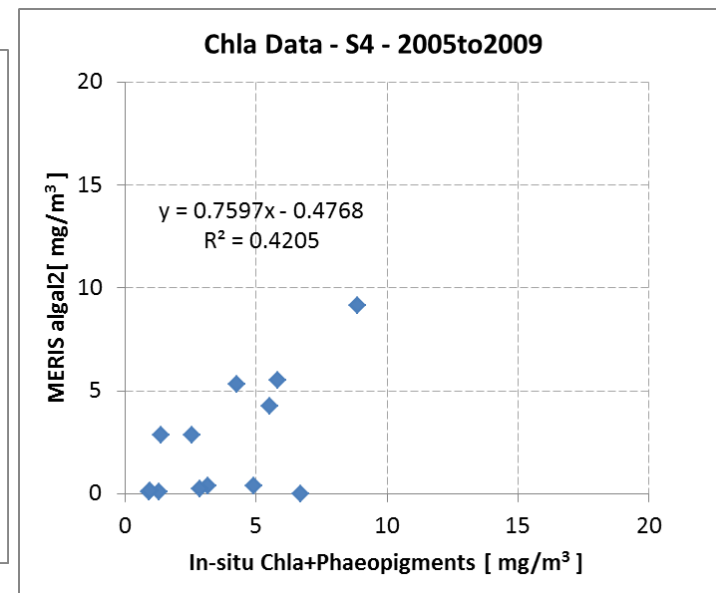
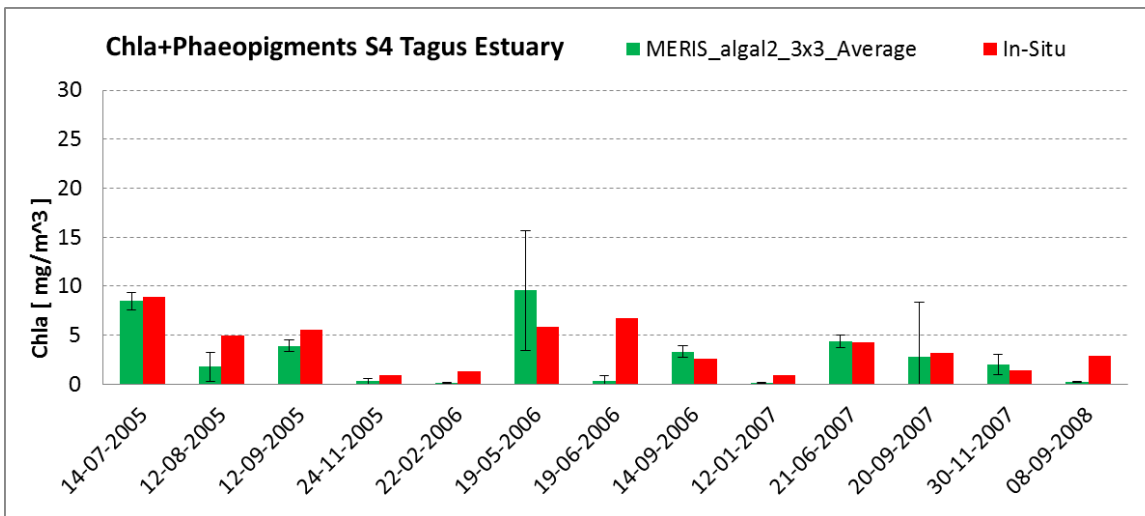
- CCMERIS data: S4, 01-Jan-2005 till 31-Dec-2009



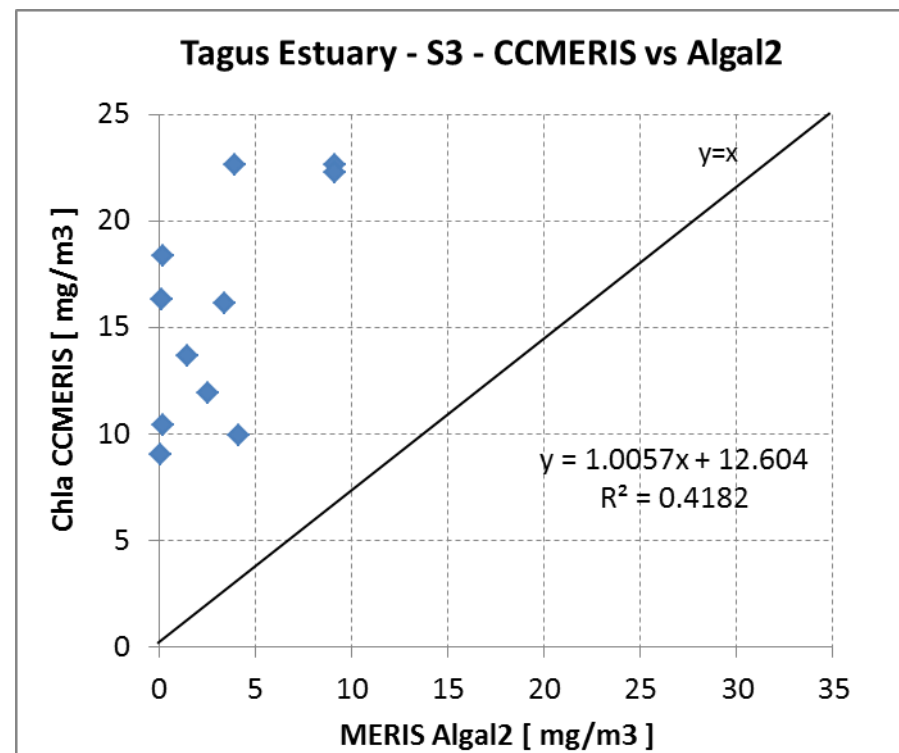
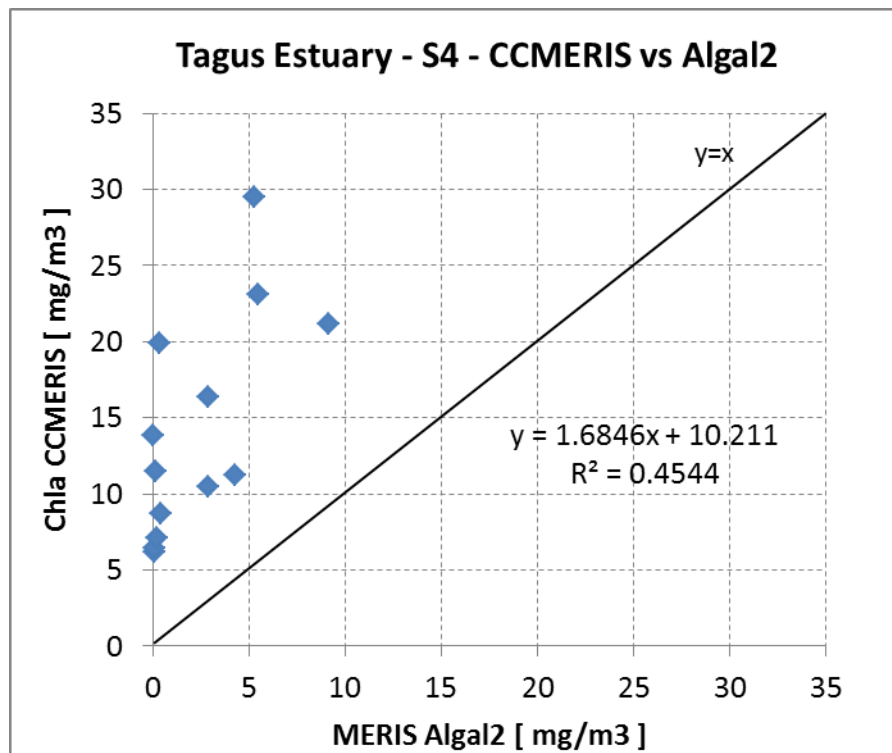




• MERIS Algal 2



- CCMERIS vs MERIS Algal 2

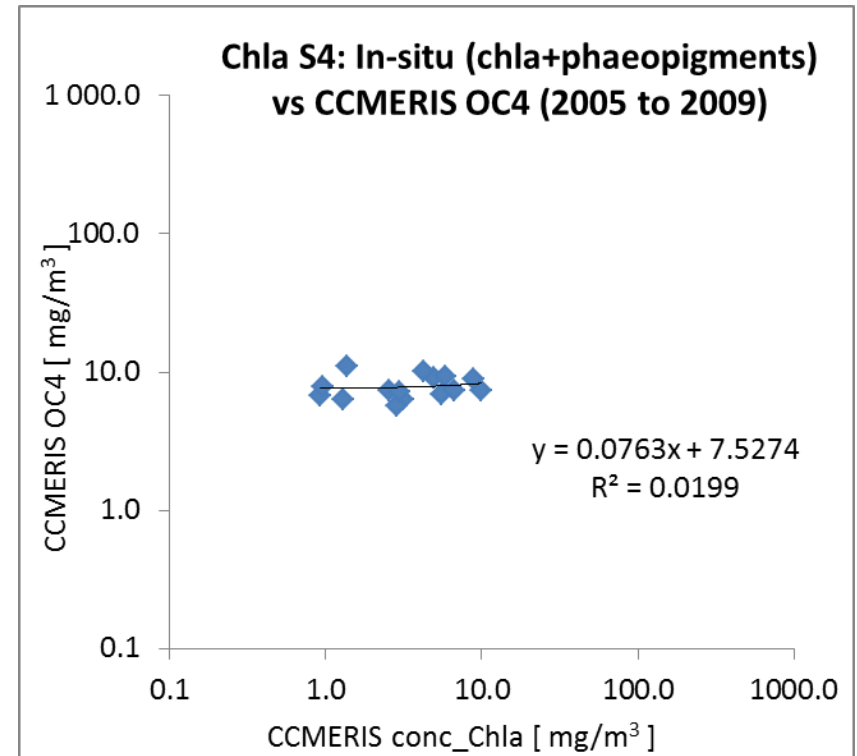
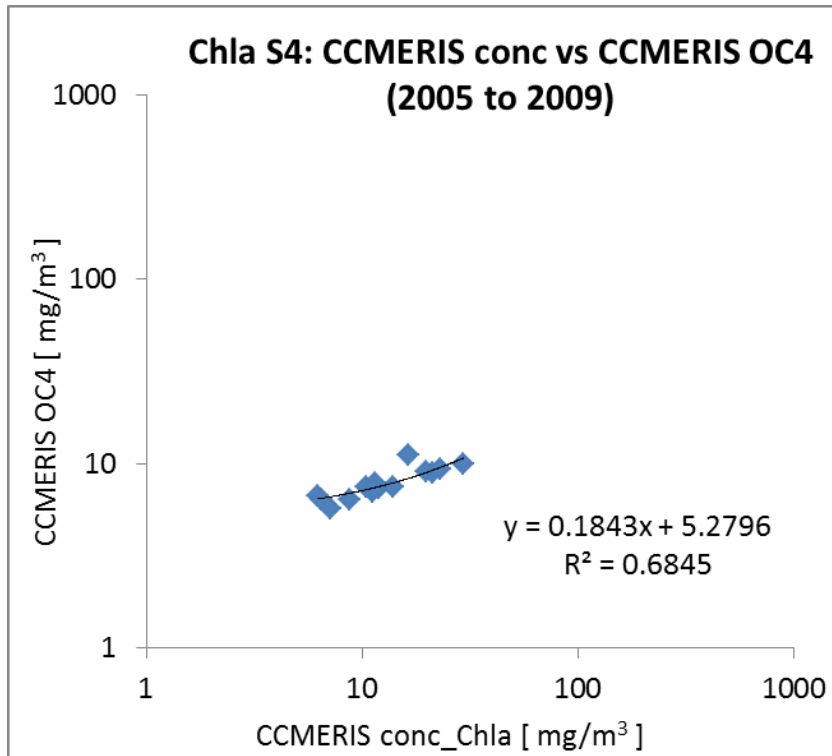


- CCMERIS with OC4

With CCMERIS Reflectance:

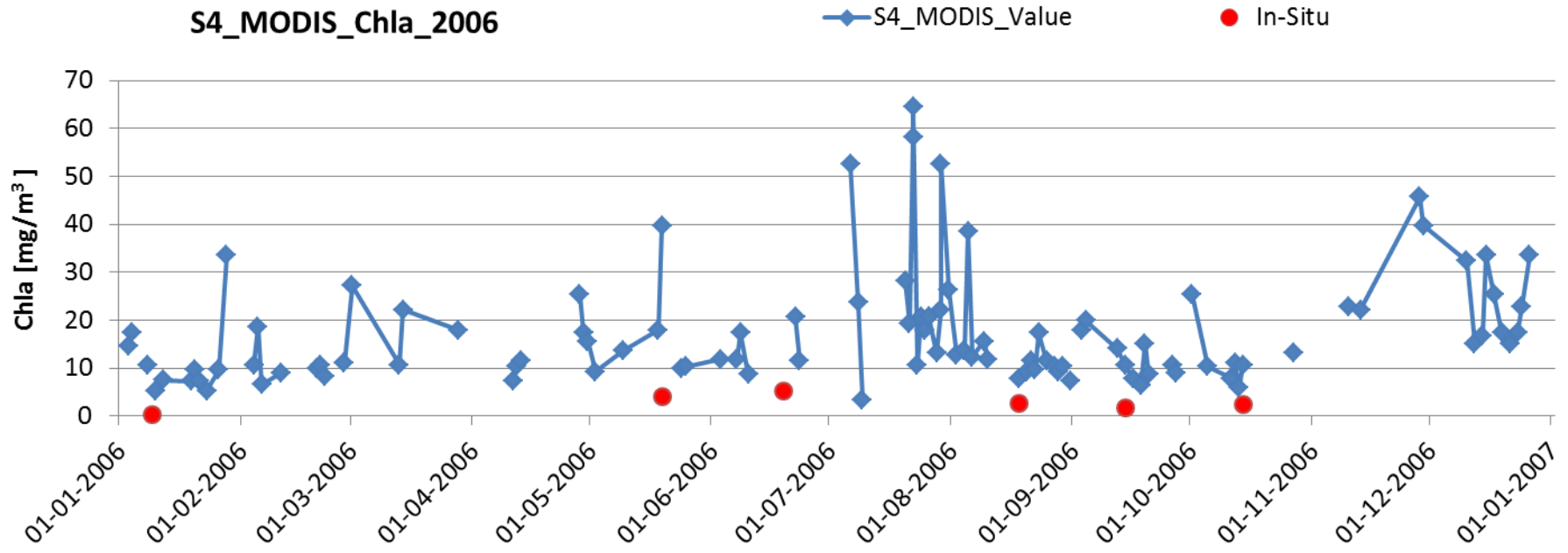
$$Chla = 10^{[0.368-2.814R+1.456R^2+0.768R^3-1.292R^4]}$$

$$R = \text{Max Log}_{10} \{Rrs443/Rrs560, Rrs490/Rrs560, Rrs510/Rrs560\}$$

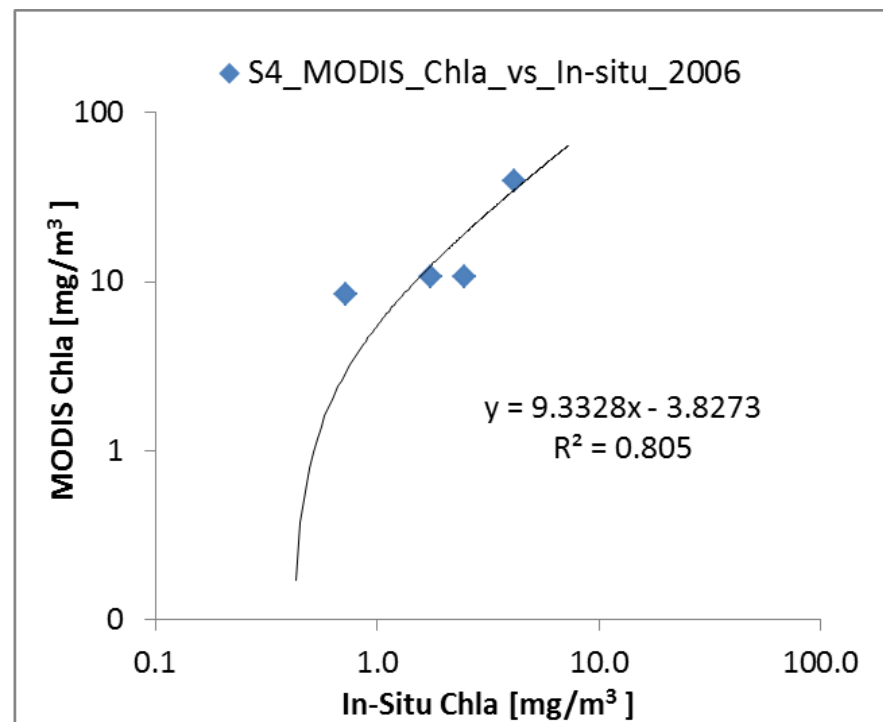
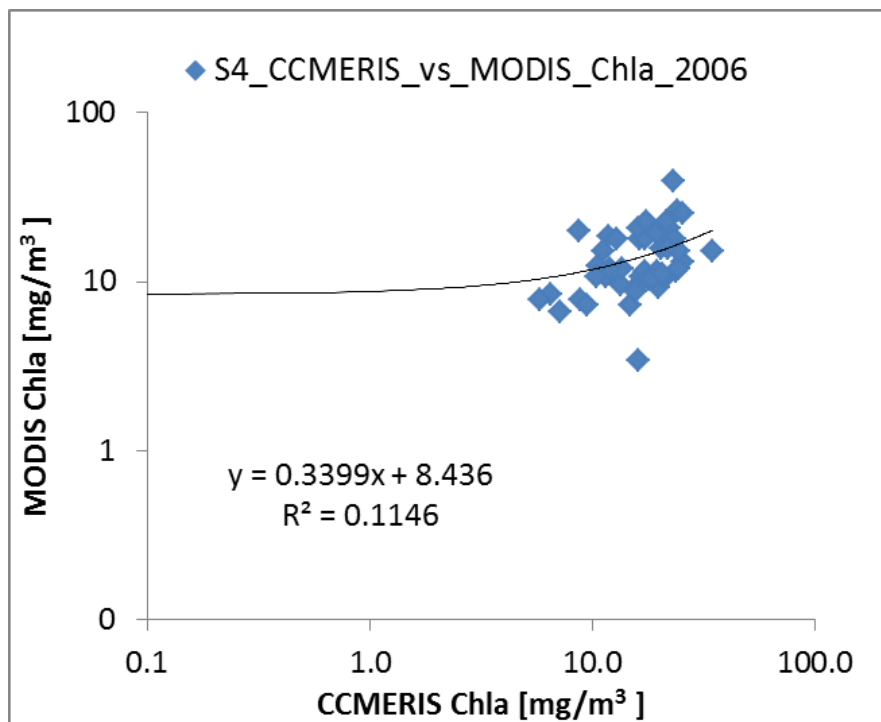


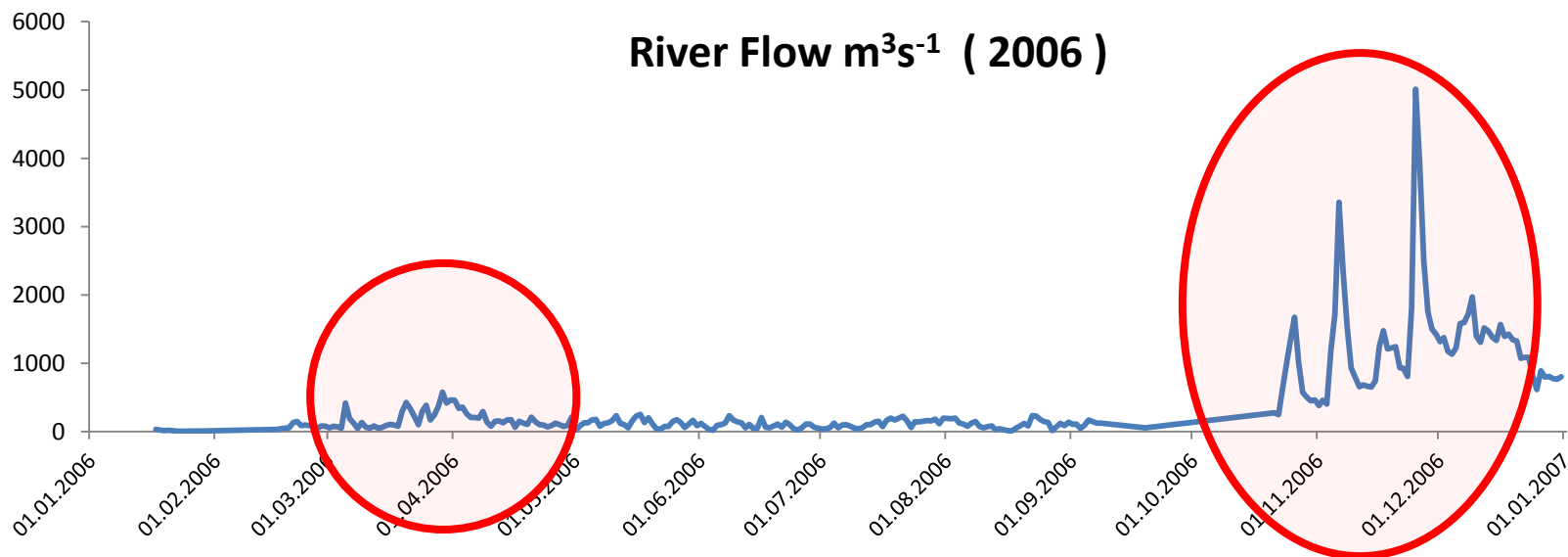
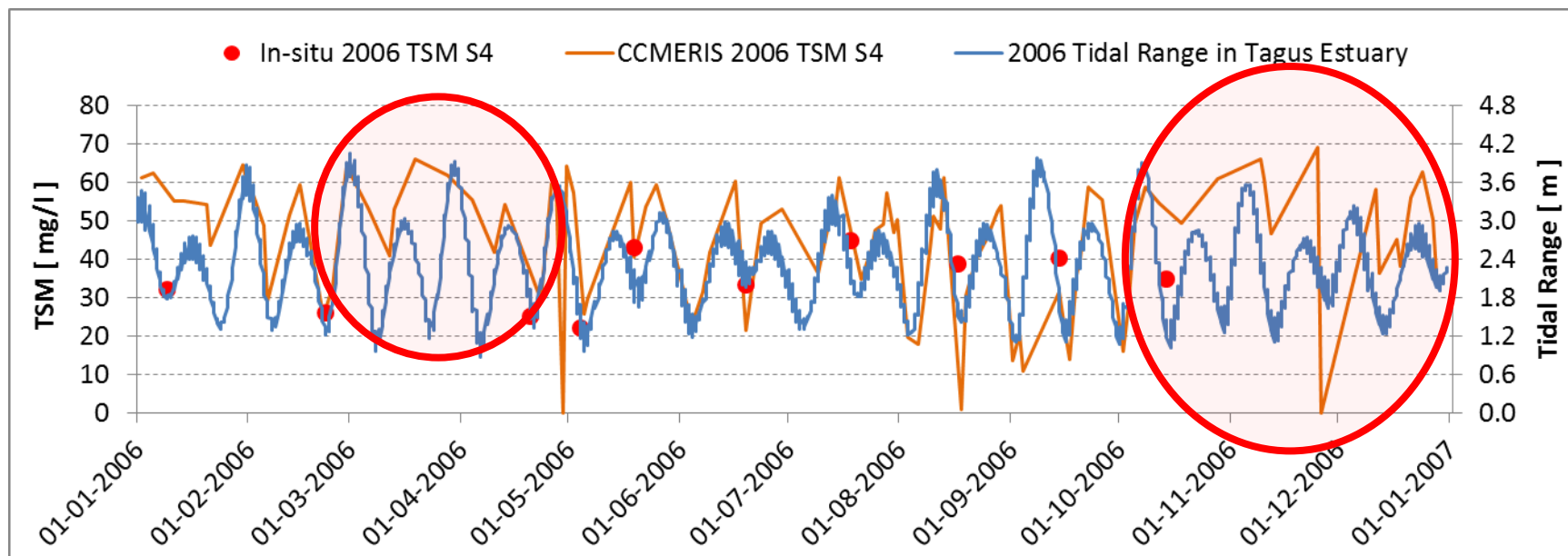
• CCMERIS vs MODIS

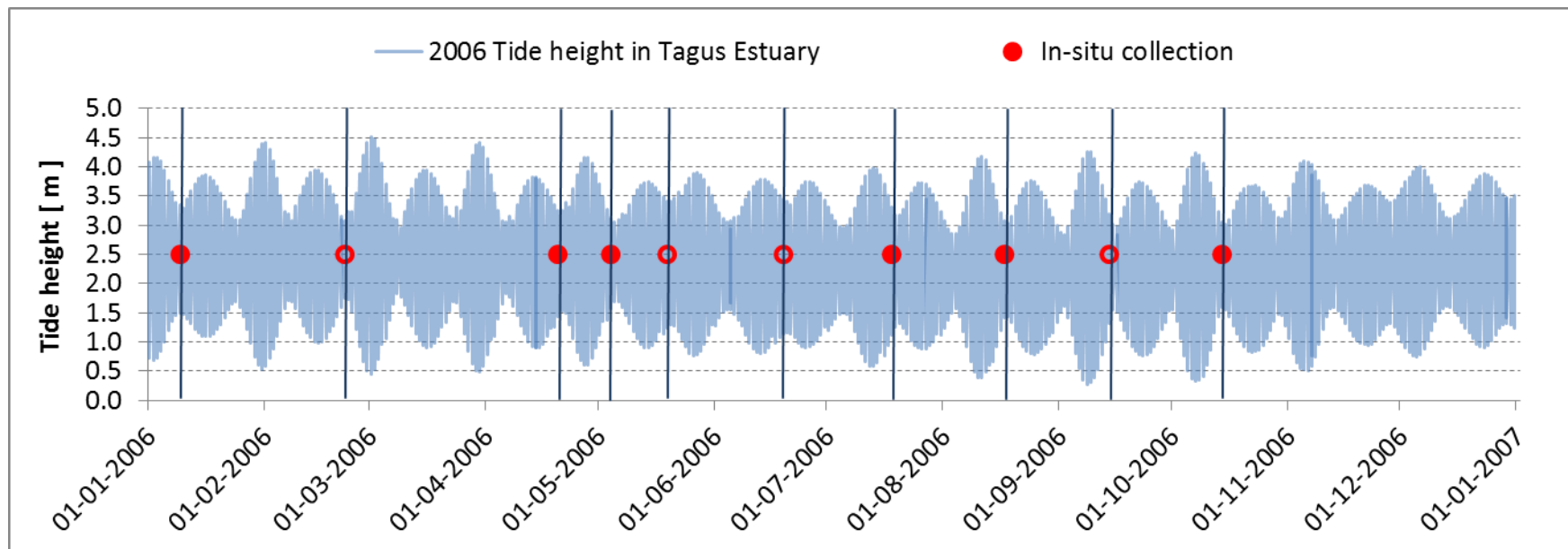
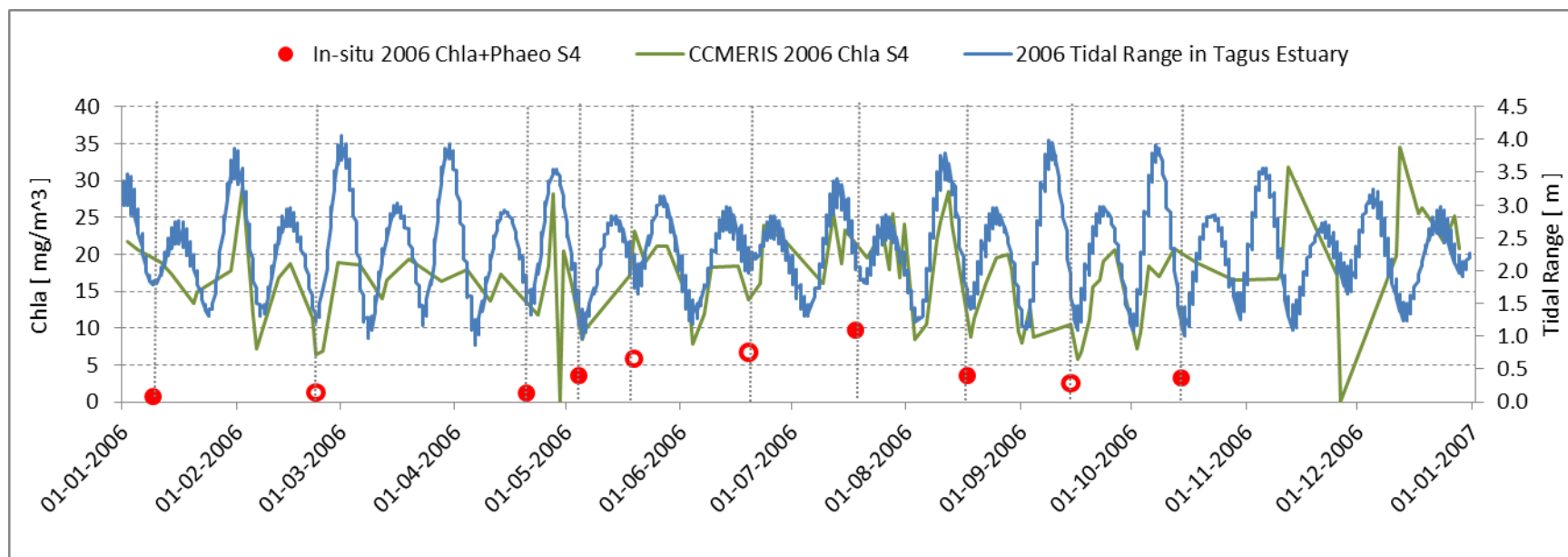
CCMERIS and MODIS Matchups 2006: 48		
Average diff.	Min diff.	Max diff.
2.63951	-17.32802	19.31125
Day	29-04-2006	12-12-2006
Diff. Time	01:57	03:01
(MERIS passed first)		

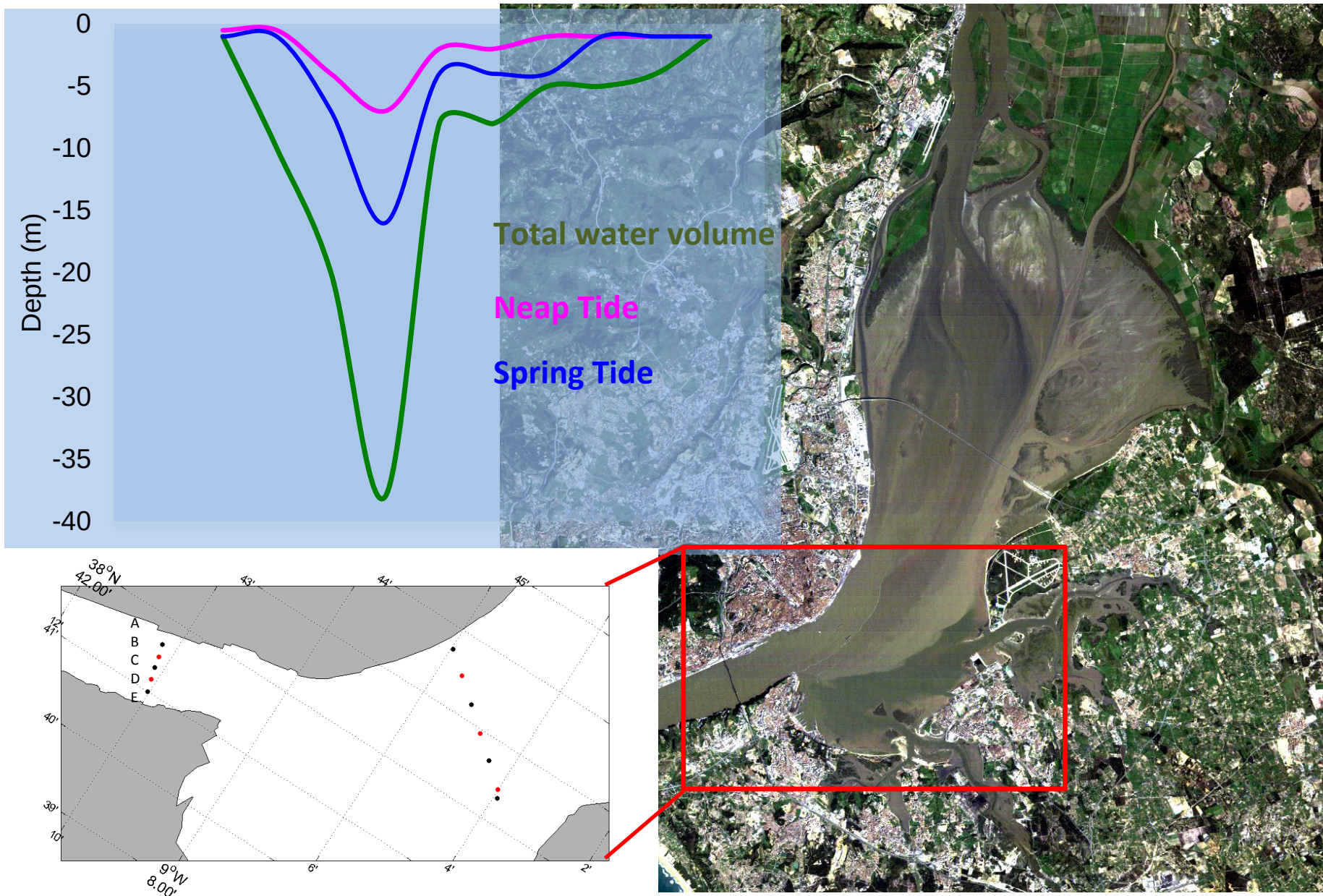


- CCMERIS vs MODIS

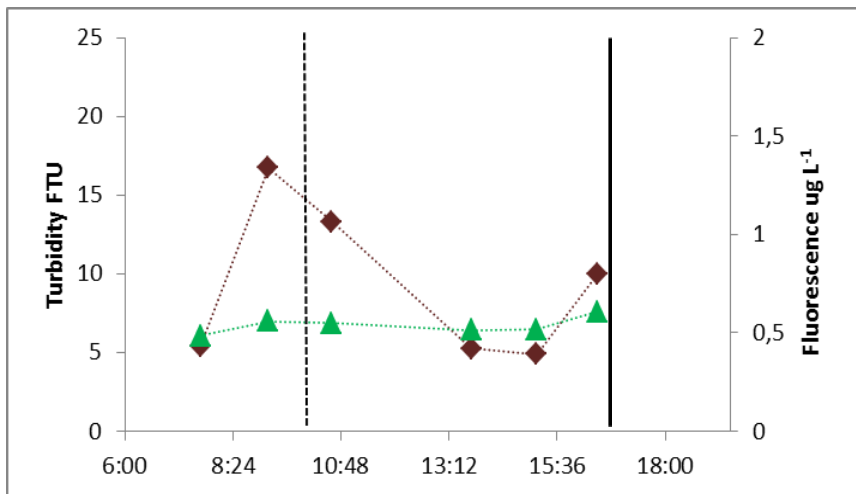




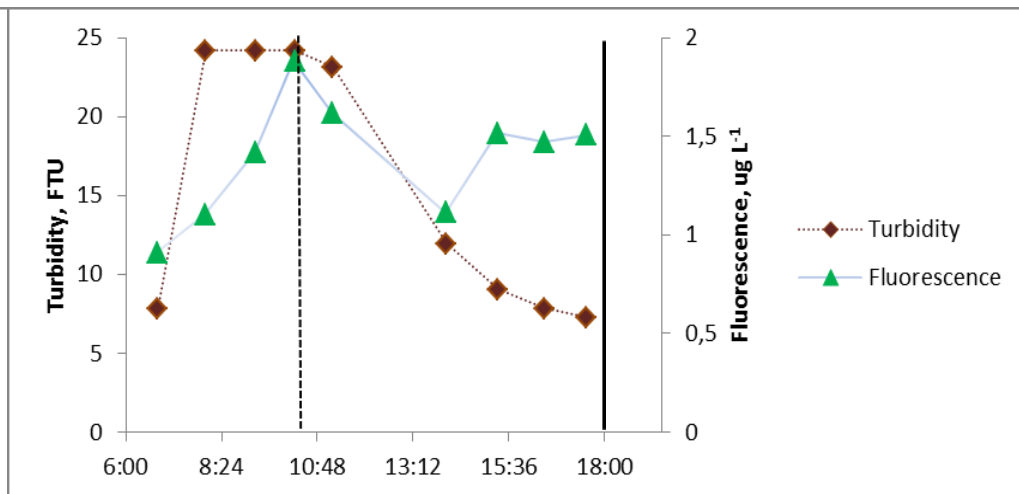




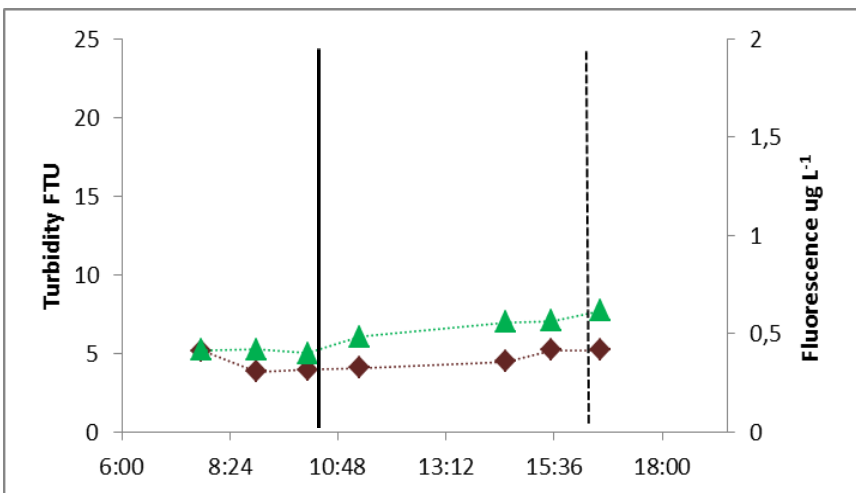
Winter, Spring Tide



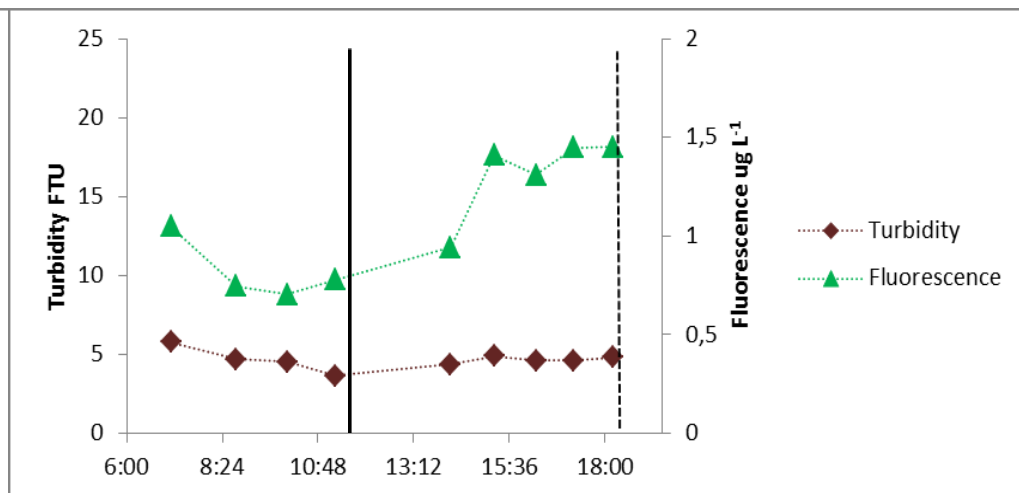
Summer, Spring Tide



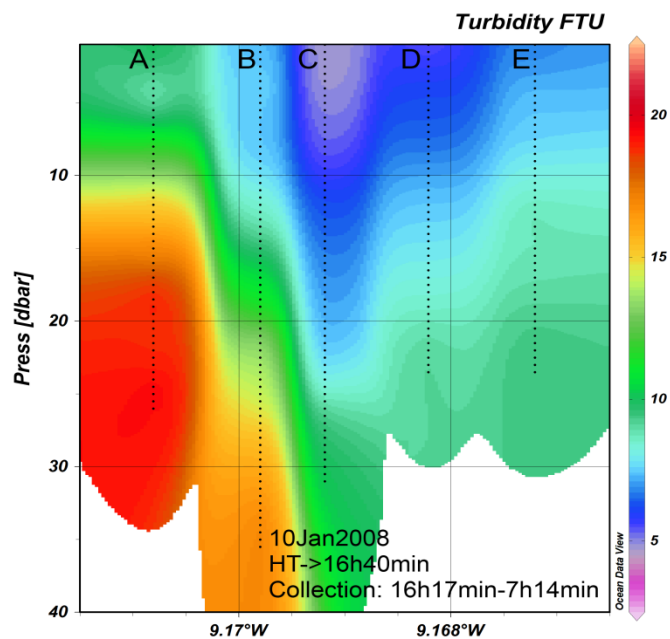
Winter, Neap Tide



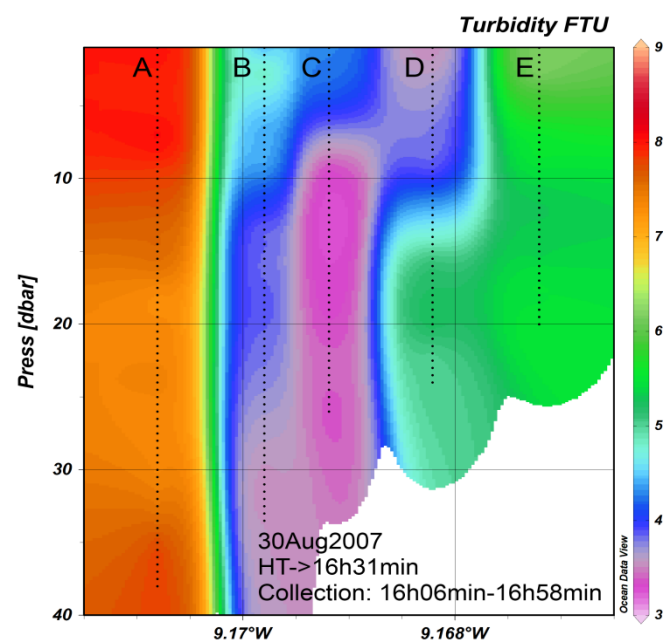
Summer, Neap Tide



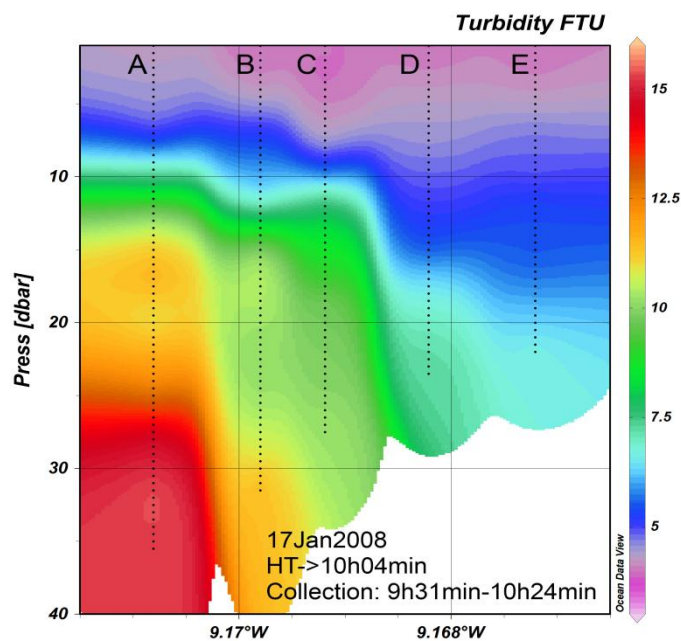
Winter, Spring Tide



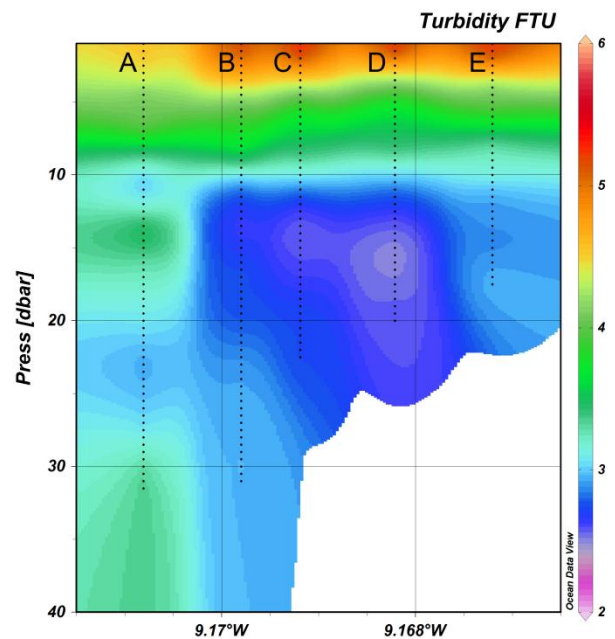
Summer, Spring Tide



Winter, Neap Tide



Summer, Neap Tide



With this results, **many questions emerged ...**

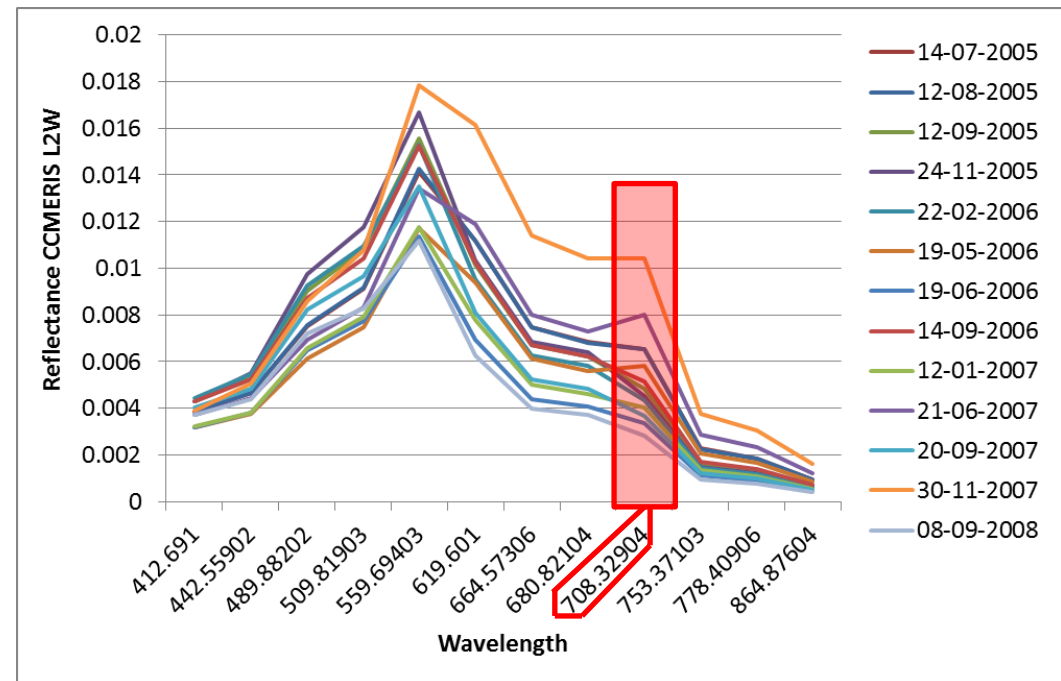
- **Statistical analysis of tidal influence (Stefano Ciavatta)**

- **FLH (Gower/Folkestad)**

Reflectance has a peak at wavelength 709 on 3 different days, but not correspond to height in-situ chla.

- **Other/New algorithms analysis** to compare Satellite vs In-situ data.

- (...)



We want to thank to:

- Valor Sul Project: Tânia Diniz
- INTagus Project: Filipe Neves, Rafael Mendes
- Dr. José da Silva, University of Porto

... and thank you for listening!

