

NASA OBPG Support for In Situ Data

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SeaBASS

SeaWiFS Bio-optical Archive and Storage System

Home	Data Users ▾	Data Contributors ▾	Data Search	NOMAD	Data Archive	Wiki	Lists ▾	Contact Us
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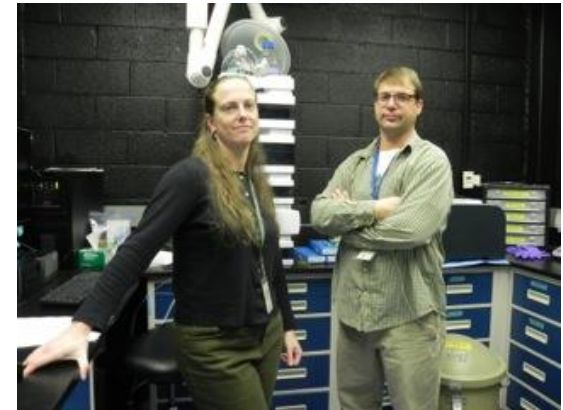
Welcome to SeaBASS, the publicly shared archive of in situ oceanographic and atmospheric data maintained by the NASA Ocean Biology Processing Group (OBPG). For information on how to search for data, please refer to the "Data Users" menu options. For information about preparing files for submission to SeaBASS, refer to "Data Contributors."

Presentation outline

- HPLC updates
- SeaBASS / in situ status report
 - Recently archived data
 - NOMAD v3 underway
 - DOIs
- Validation updates
 - Capabilities, website upgrades
 - New Data Sources (AERONET-OC, MOBY)
 - MERIS

HPLC updates

Contract Year	Samples Processed
Year 2 (ended 8/31/2013)	3004
Year 3 (in progress)	1800 (750 in queue at NASA)



<http://oceancolor.gsfc.nasa.gov/HPLC/>

- Visit for shipping and contact info

Updated reporting policy for “zeros”: -111 is the new replacement value for not-found pigments

- New SeaBASS header: /below_detection_limit=-111

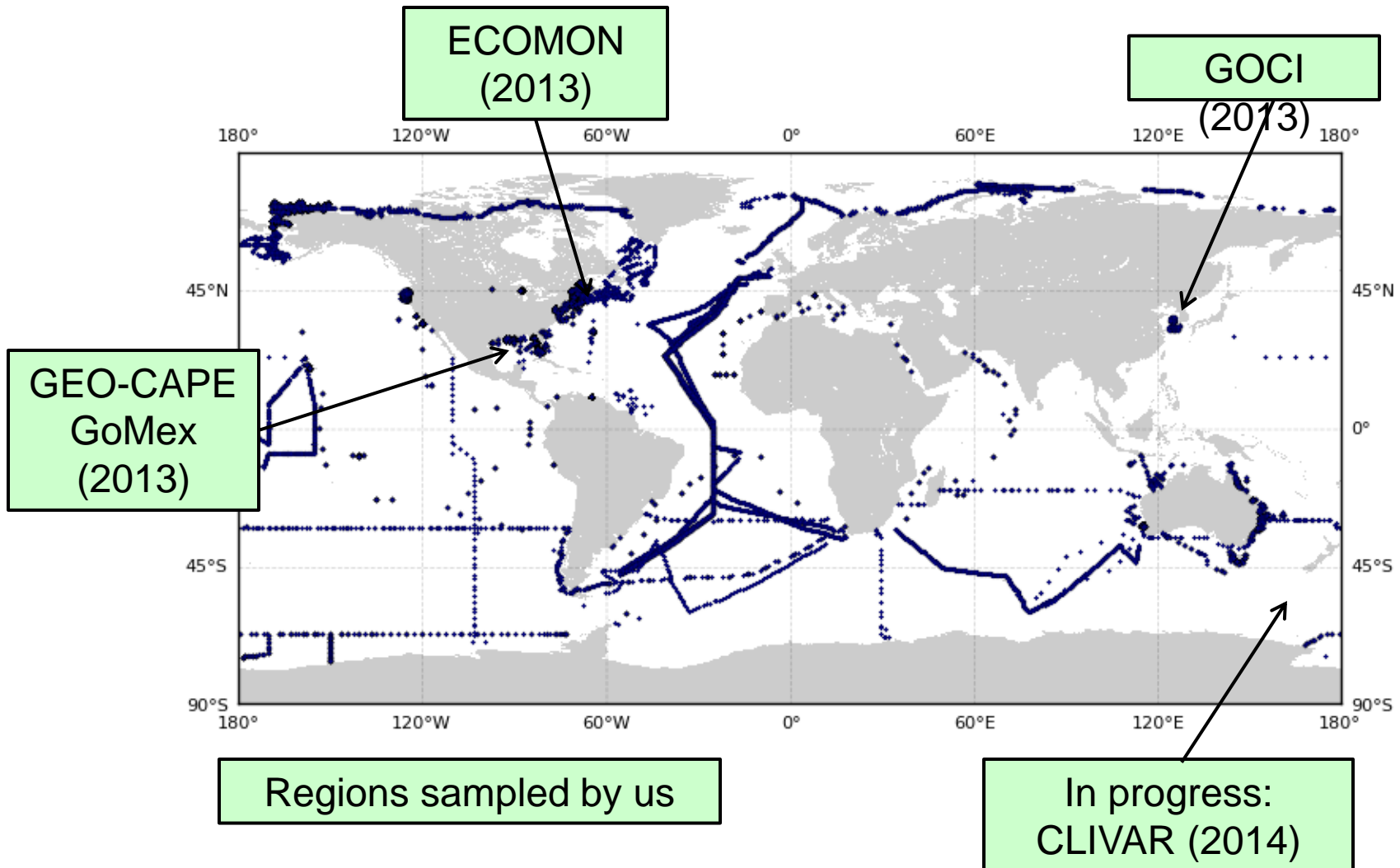
Data quality actively monitored and reassessed

- Newest activities include:
 - Recalibration and reassessment of lower limits of quantitation (LLOQs)
 - Updated quality assurance plan
 - Method development (goal of improving detectibility)



Recently archived data in SeaBASS

Over 7500 files from 39 PIs archived since 2013



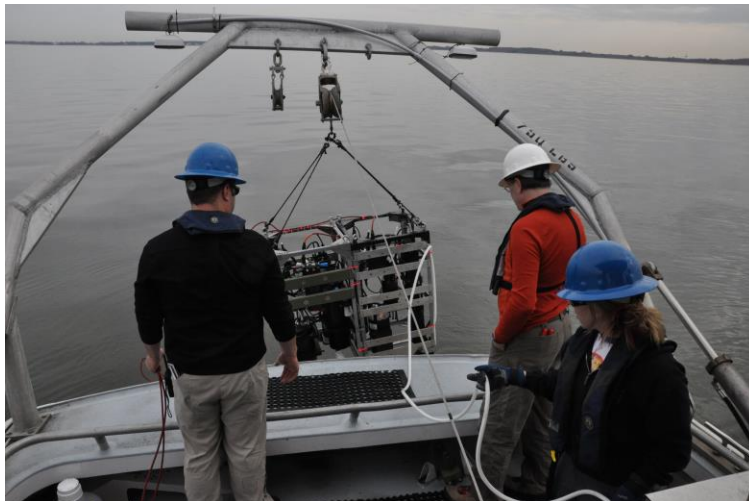
NOMAD

NASA bio-Optical Marine Algorithm Dataset

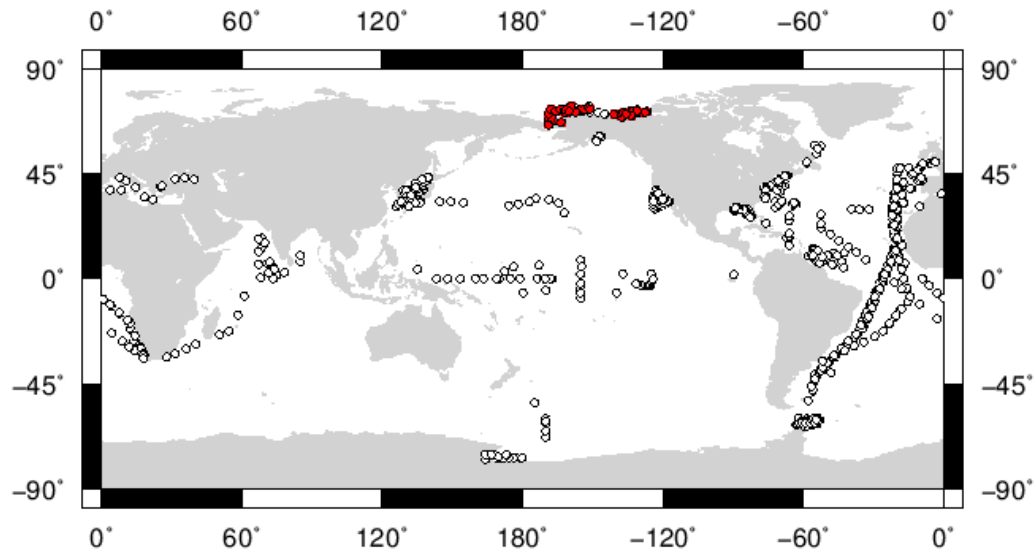
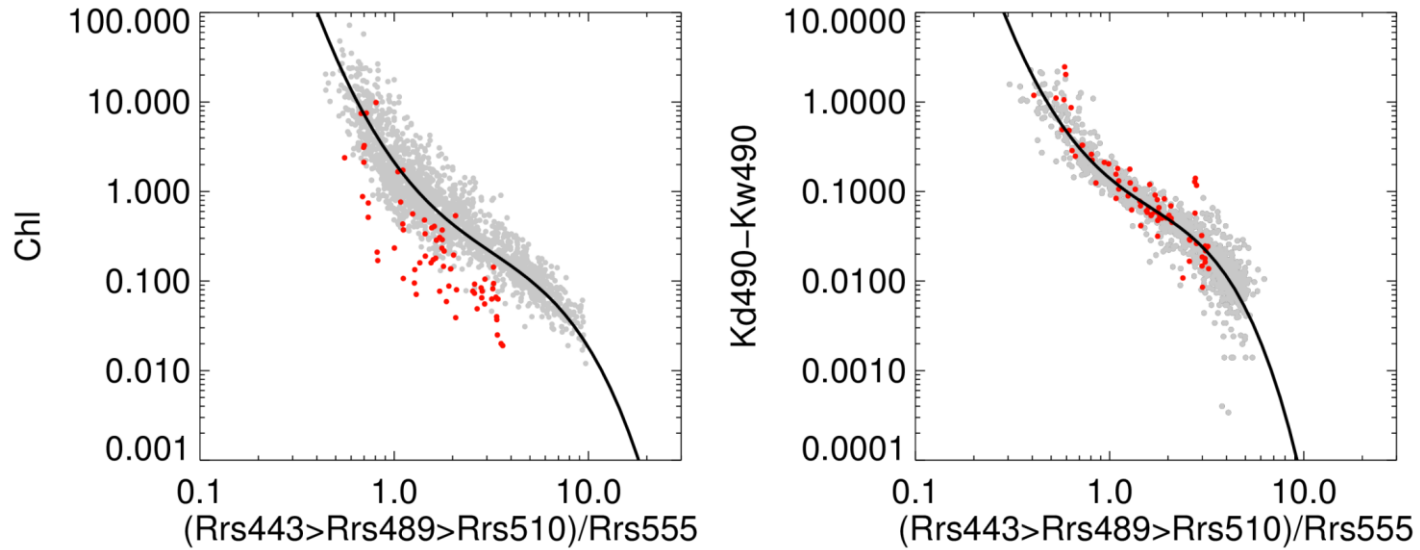
Version 3 is being developed – will be released later this year

Includes some “exotic” new data – Polar regions, HABs, turbid coastal waters, etc

Some data are sufficiently unusual to not be included in the global OC Kd and Chl algorithms



New Arctic Data for OC* and KD2* Algorithms



Digital Object Identifiers (DOIs)

- A new service provided to the community
- Numbers and landing pages are persistent

For example: [10.5067/SeaBASS/BBOP/DATA001](https://doi.org/10.5067/SeaBASS/BBOP/DATA001)

<http://seabass.gsfc.nasa.gov/seabasscgi/data.cgi?experiment=BBOP>

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BBOP

Experiment:	BBOP
PIs*:	Nelson, Norman Siegel, David
Start Time:	1988-10-20 22:30:00
End Time:	2013-04-08 18:04:00
North:	37.65560
South:	19.66572
East:	-61.16500
West:	-66.99630

*Listed alphabetically

DOI

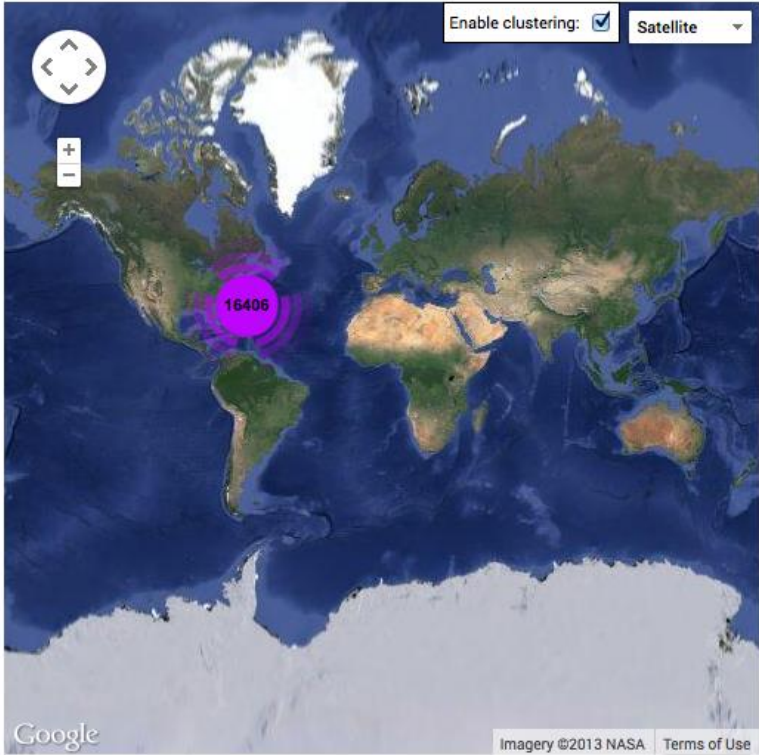
10.5067/SeaBASS/BBOP/DATA001

Description

The Bermuda Bio-Optics Project (BBOP) is a long term study of the factors contributing to the regulation of the underwater light field in the open ocean and the resulting biogeochemical impact. These studies are done, on average, once a month in conjunction with the Bermuda-Atlantic Time Series (BATS) in the Sargasso Sea.

URL

<http://www.oceancolor.ucsb.edu/bbop/>



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<http://seabass.gsfc.nasa.gov>

SeaBASS Data Search: Validation

Search Type:

Bio-optical
 Pigment
 Validation



Validation search features:

- search standard ocean color products
- map and plot search results
- download data and statistics

Compare:

VIIRS vs. In situ
 MODIS Aqua vs. SeaWiFS

Products:

- a adg aot aph bbp Chl a
 Kd par pic poc Rrs
 Zeu

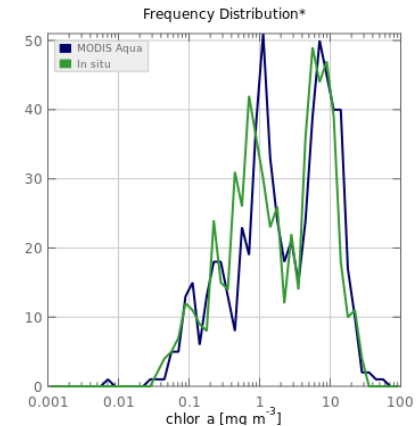
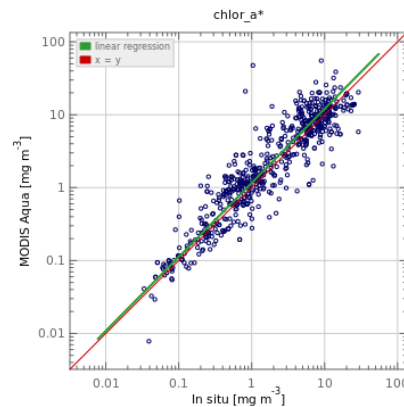


Statistics Data

Product Name	MODIS Aqua Range	In situ Range	#	Best Fit Slope*	Best Fit Intercept*	R ² *	Median Ratio	Abs % Difference	RMSE*
chlora	0.00781, 55.23780	0.03340, 29.04500	631	1.01529	0.06471	0.86487	0.86773	32.88839	0.27831

* statistical calculations based on log10

The linear regression algorithm has been changed to reduced major axis.



Download Validation Data from SeaBASS

- Text files containing side-by-side satellite and in situ values
- The files also contain the satellite file names corresponding to the match-ups

<http://seabass.gsfc.nasa.gov/seabasscgi/search.cgi>

Search Type:

The screenshot shows the SeaBASS search interface. On the left, a blue button labeled "Data Search" has a blue arrow pointing to a search type selector. The selector has three tabs: "Bio-optical", "Pigment", and "Validation". The "Validation" tab is selected, indicated by a blue arrow pointing up to it. Below the selector is a "Search Results" box. Inside this box, it says "Total number of matchups: 4505" and "Date format is YYYY-MM-DD, time format is HH:MM:SS, and times are GMT. Only products with matchups will be displayed." At the bottom of the search results box, there are four buttons: "Rrs" (with a dropdown arrow), "Download Stats/Plots", "Generate CSV", and "Download CSV". The "Download CSV" button is circled in black.

Additional Validation Data Sources

Aerosol Robotic Network - Ocean Color (AERONET-OC) Zibordi et al. (2009)

Aqua Rrs(443) Match-ups	Number
SeaBASS holdings	~470
AERONET-OC	~940



Data Sources:

SeaBASS Only All* AERONET-OC Only* MOBY Only*

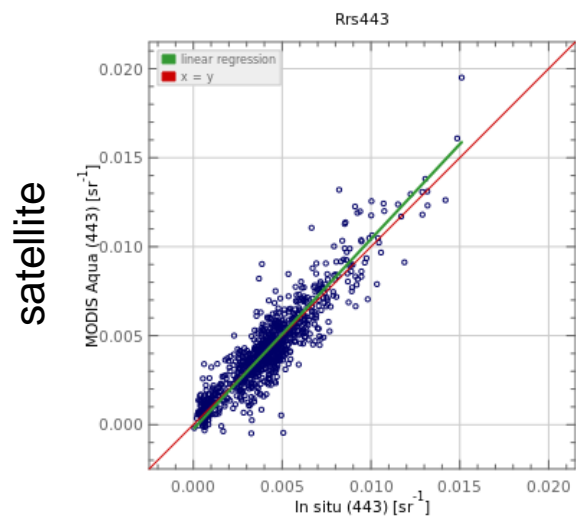
- Only level 2.0 AERONET-OC data used (cloud cleared, fully calibrated, and manually inspected)
- Exception: VIIRS match-ups currently use level 1.5



MODIS Aqua: AERONET-OC Rrs match-ups

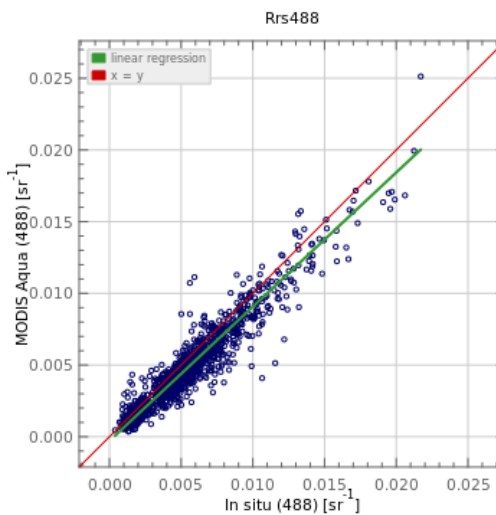
Product Name	MODIS Aqua Range	In situ Range	#	Best Fit Slope	Best Fit Intercept	R ²	Median Ratio	Abs % Difference	RMSE
Rrs412	-0.00411, 0.01471	0.00000, 0.01331	1275	1.08572	-0.00070	0.73824	0.84305	31.39010	0.00134
Rrs443	-0.00049, 0.01950	0.00005, 0.01510	941	1.06756	-0.00025	0.85732	1.01731	15.81557	0.00103
Rrs488	0.00036, 0.02513	0.00039, 0.02171	1275	0.93578	-0.00029	0.91855	0.87405	14.88161	0.00117
Rrs531	0.00141, 0.01602	0.00242, 0.01812	176	0.95389	-0.00069	0.86171	0.82037	18.99484	0.00155
Rrs547	0.00187, 0.01265	0.00194, 0.01480	52	0.96871	-0.00031	0.77730	0.88500	15.56732	0.00153

Rrs(443)



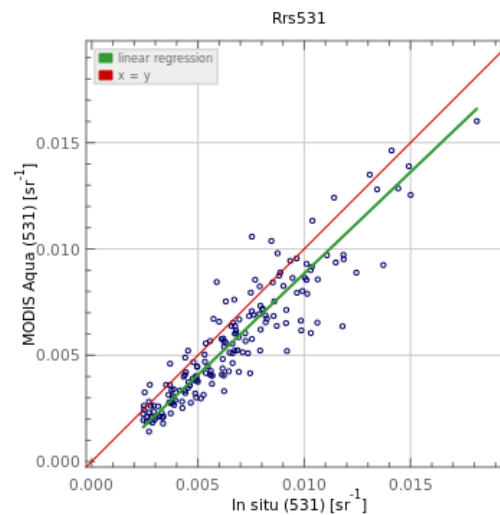
In situ

Rrs(488)



In situ

Rrs(531)



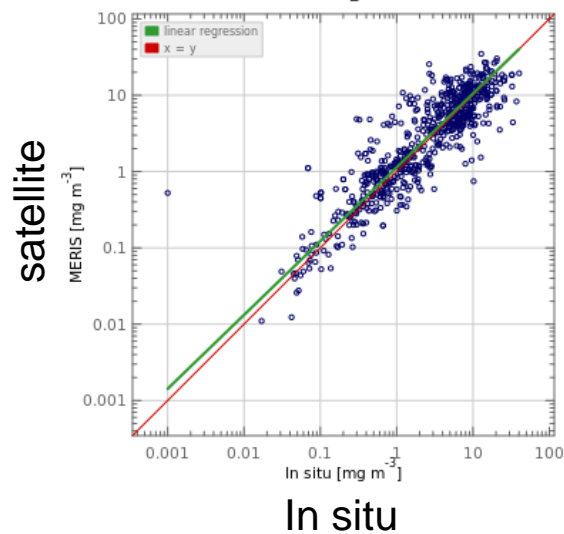
In situ

MERIS Validation

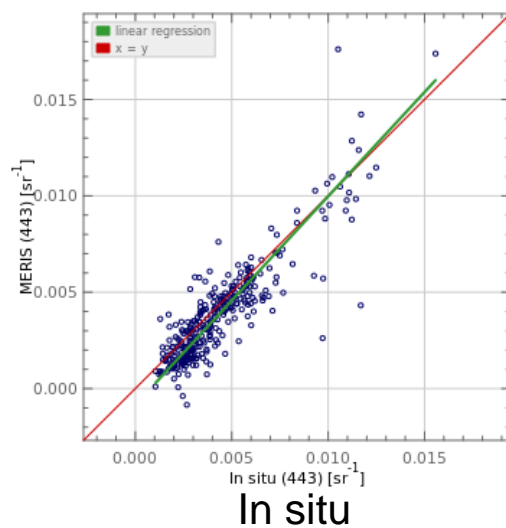
Now available in SeaBASS

Product Name	MERIS Range	In situ Range	#	Best Fit Slope	Best Fit Intercept	R ²	Median Ratio	Abs % Difference	RMSE
Rrs413	-0.00183, 0.01561	0.00088, 0.01514	211	1.11536	-0.00116	0.80285	0.78653	32.97705	0.00173
Rrs443	-0.00084, 0.01761	0.00104, 0.01557	319	1.08166	-0.00084	0.81298	0.88944	17.85008	0.00133
Rrs490	0.00080, 0.02499	0.00142, 0.02442	323	1.05154	-0.00072	0.79331	0.87483	15.22883	0.00135
Rrs510	0.00106, 0.02567	0.00131, 0.02538	306	1.09065	-0.00067	0.85113	0.88907	14.41068	0.00108
Rrs560	0.00087, 0.02889	0.00085, 0.02862	205	1.05739	-0.00042	0.91184	0.86058	16.22139	0.00114
Rrs665	-0.00071, 0.01217	0.00003, 0.01078	234	1.09174	-0.00011	0.92440	0.74628	44.40696	0.00042
Rrs681	-0.00001, 0.00235	0.00020, 0.00199	6	1.13244	-0.00027	0.80140	0.82672	28.14454	0.00042

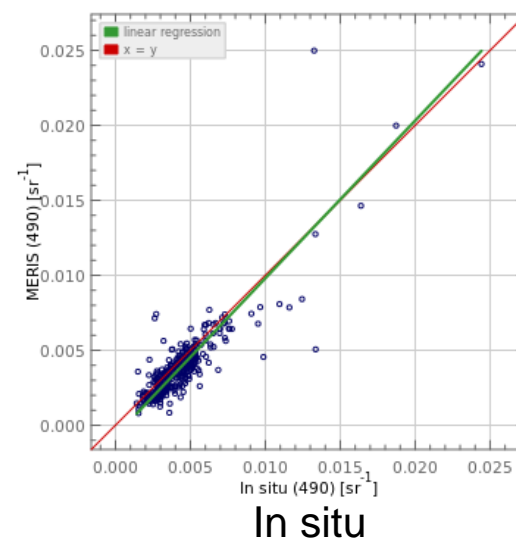
Chl a
chlor_a*



Rrs(443)
Rrs443



Rrs(490)
Rrs490



Thank you