

Participation of SYKE/Alg@line in European projects

Seppo Kaitala, Jukka Seppälä, Petri Maunula,
Seija Hällfors, Kari Y. Kallio, Stefan Simis,
Pasi Ylöstalo, John Olsson & Anniina Le Tortorec

Finnish Environment Institute (SYKE)

Alg@line Highlights



1991: the first recordings on-route Helsinki-Tallinn with Georg Ots

1992: the system installed on-board Finnjet

1993: the "official" launch of Alg@line

1997: Finnish-Estonian operative monitoring system of the state of the Gulf of Finland

- Finnish Institute of Marine Research
- Estonian Marine Institute
- Uusimaa Regional Environment Centre
- City of Helsinki Environment Centre

2003-2005 : Ferrybox EU project

2005- current: ESA/MarCoast baseline service

2008: Cooperation with SMHI for Oulu-Göteborg route

2009: MyOcean In Situ Thematic Center


2011: Aquamar, CoBIOS, JERICO



<http://BalticSeaPortal.fi> -> Algaline

Text version Suomeksi På svenska Eesti keeles Print: Text size:

The Baltic Sea Portal



Search

- » Advanced search
- » Sitemap
- » Pages from A to Z

Frontpage Baltic Sea Now **Baltic Sea Information** Research Services Publications New and current

Portal » Baltic Sea Information » Algaline

These pages will be updated with the renewal of the service in 2009.

» [General information](#)

» [Water movements](#)

» [Ice conditions](#)

» [Open sea](#)

» [Sea bottom](#)

» [Eutrophication](#)

» [Harmful substances](#)

» [Invasive species](#)

» [Reports on the state of the Baltic Sea](#)

» [Helcom monitoring +](#)

» [Algaline -](#)

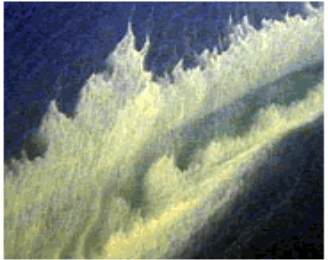
- » [Newest measurements](#)
- » [Time series](#)
- » [Species reports](#)
- » [Data archive](#)

» [State of the Baltic Sea News](#)

Tämä sivu suomeksi
Denna sida på svenska

Alg@line is a forerunner in the field of monitoring research

Algaline monitors the fluctuations in the Baltic Sea ecosystem in real-time using several approaches. It combines studies onboard research vessels with high-frequency automated sampling onboard several merchant ships, satellite imagery, buoy recordings and traditional sampling in coastal waters.



Results of the Algaline project

- [Newest measurements](#)
- [Time series](#)
- [Species reports](#)
- [Data archive](#)

Related topics

- » [Algaline method description](#)
- » [Algae information](#)

See also


- » [Eutrophication at the Baltic Sea](#)
- » [Studies of eutrophication](#)
- » [State of the Baltic Sea](#)


Baltic Sea Now

- » [Cyanobacterial biomass forecast](#)

updated 7.5.2008

Portal information Contact information Feedback

 YMPÄRISTÖMINISTERIÖ
MILJÖMINISTERIET
MINISTRY OF THE ENVIRONMENT

 SYKE

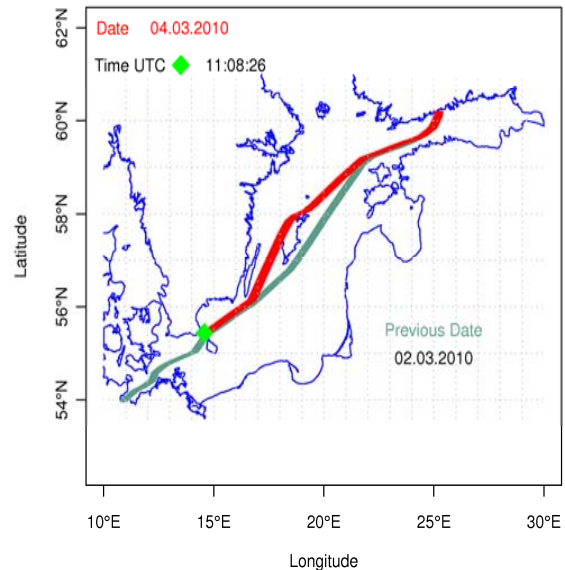
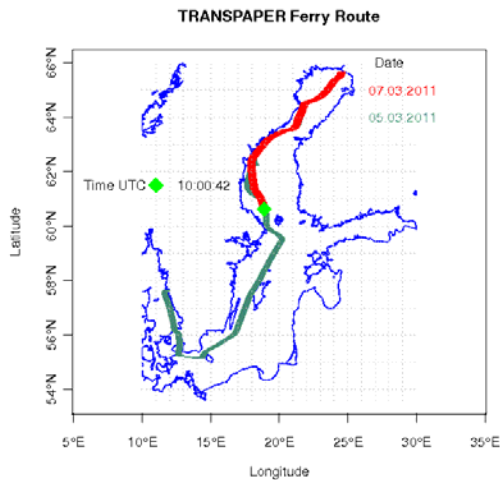
 FINNISH METEOROLOGICAL INSTITUTE

Near real time observations on commercial ferries

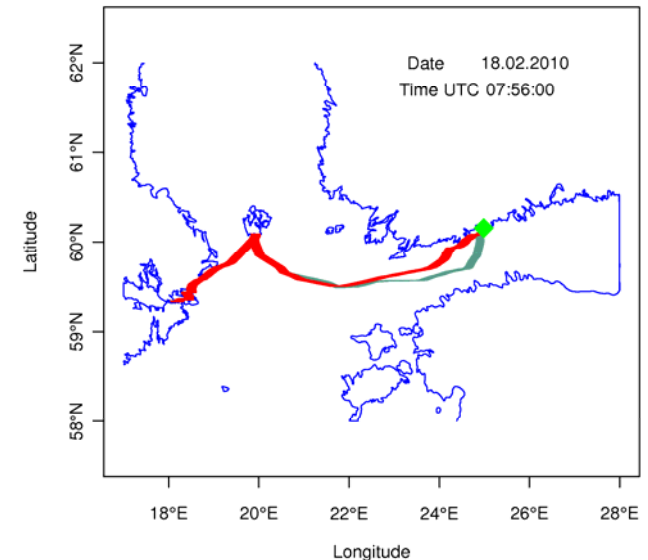
Time, location, from GPS
Salinity
Temperature
Chlorophyll
Phycocyanin
Turbidity
Water samples for CHLA, inorganic nutrients and phytoplankton species analysis

Traspaper in cooperation with SMHI
Finnmaid in cooperation with IOW
Silja Serenade in cooperation with Uusimaan ELY center and Helsinki Environment Center

FINNMAID Ferry Route



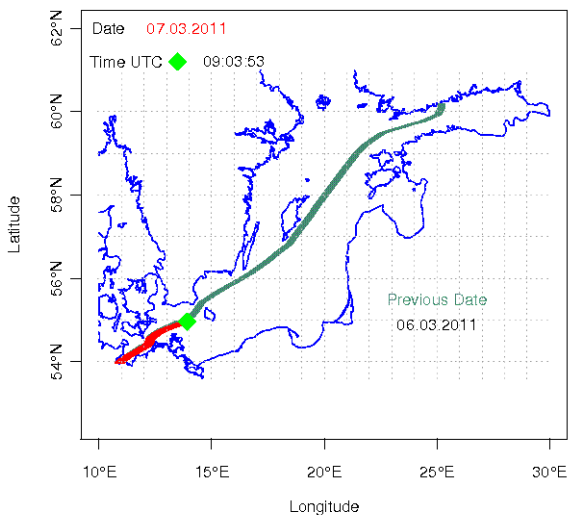
Silja Serenade Ferry Route



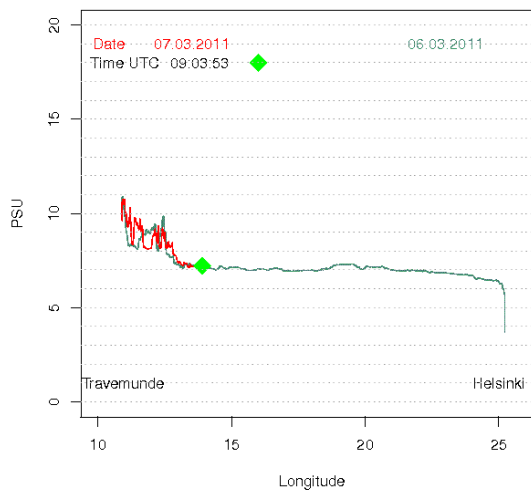
Current observations on FINNMAID (7.3.2011)

www.baltiseaportal.fi

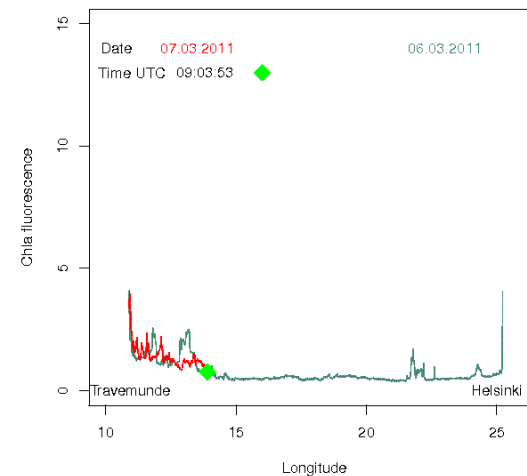
FINNMAID Ferry Route



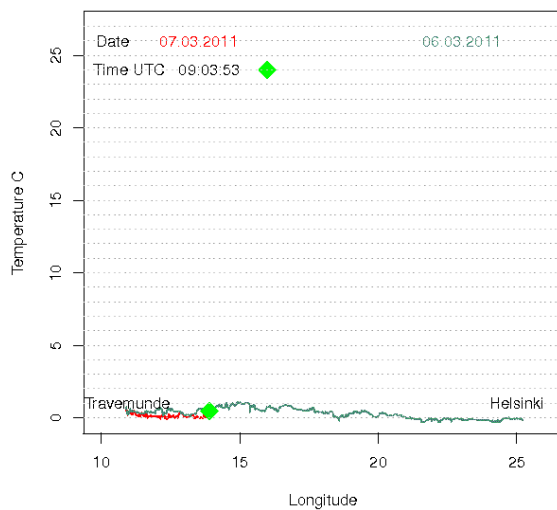
Salinity



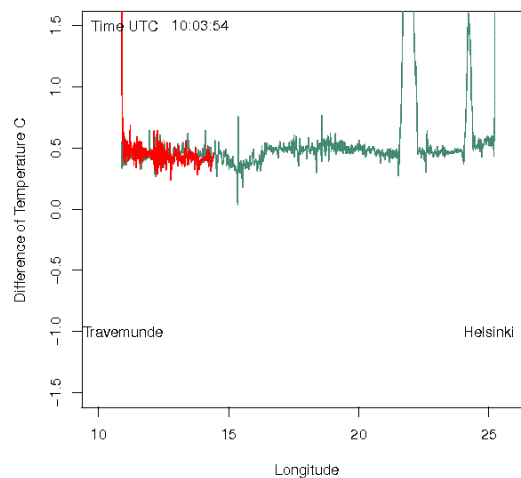
Chla fluorescence



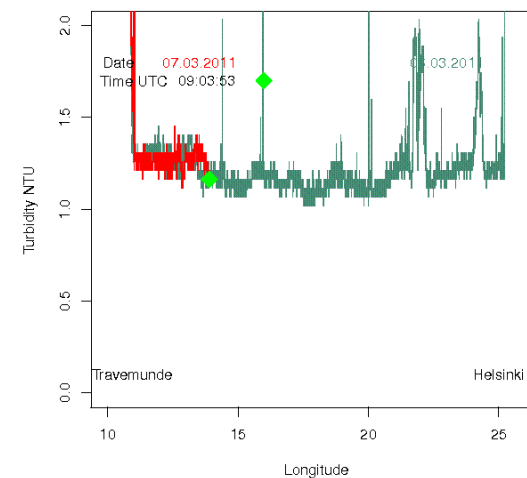
Water temperature



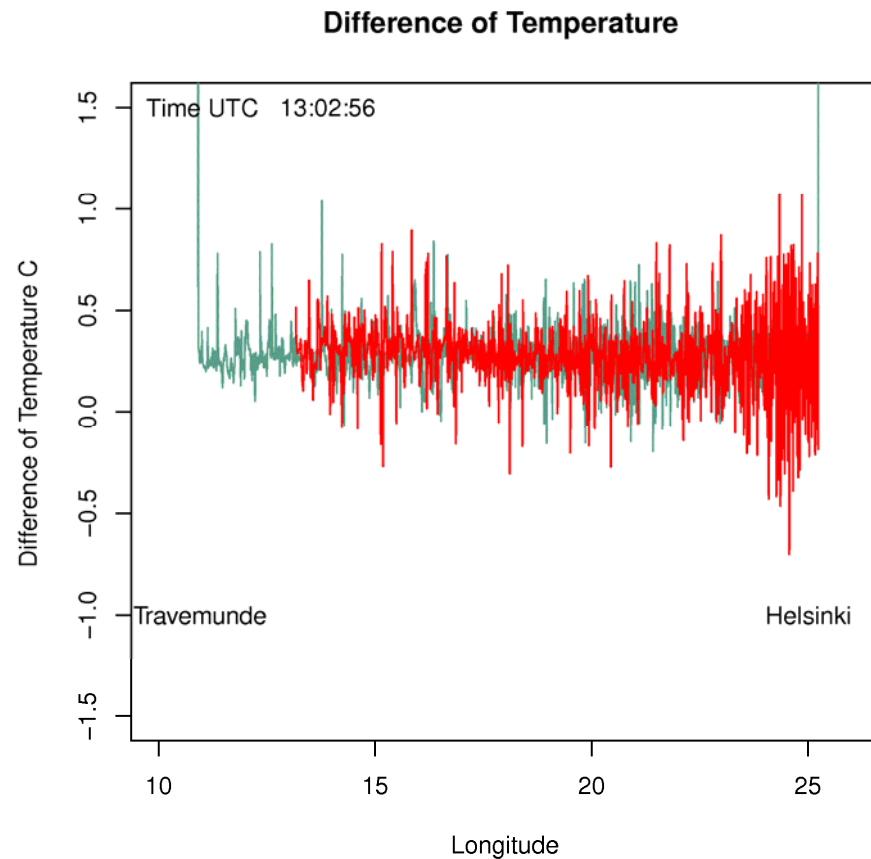
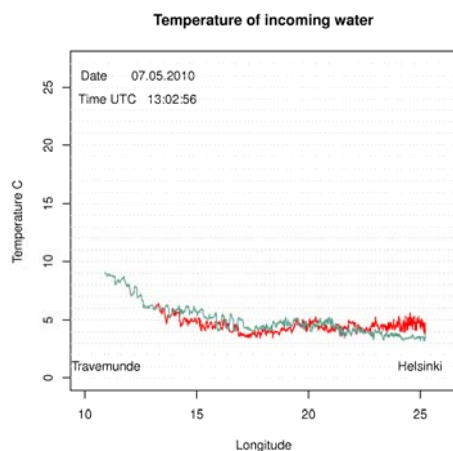
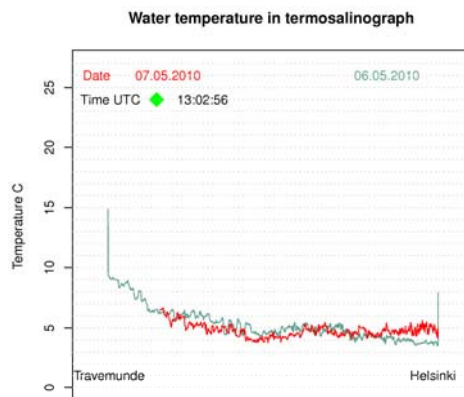
Difference of Temperature



Turbidity



One of the tasks is to ensure the routine validation of real-time production
 In Algaline monitoring this is partly carried out with the difference of 2 parallel observations of temperature; thermometer by the water inlet and the termosalinograph. Red is current observations, gray is previous cruise data.



Real Time Quality Control of biogeochemical measurements

<i>Table 1: Quality flag scale. Codes marked in red are mandatory following the RTQC procedure</i> Code	Meaning
0	No QC was performed
1	Good data
2	Probably good data
3	Bad data that are potentially correctable
4	Bad data
5	Value changed
6	Below detection limit
7	In excess of quoted value
8	Interpolated value
9	Missing value
A	Incomplete information

Flaged data to database

File Edit View Insert Format Tools Data Window Help

Liberation Sans 10

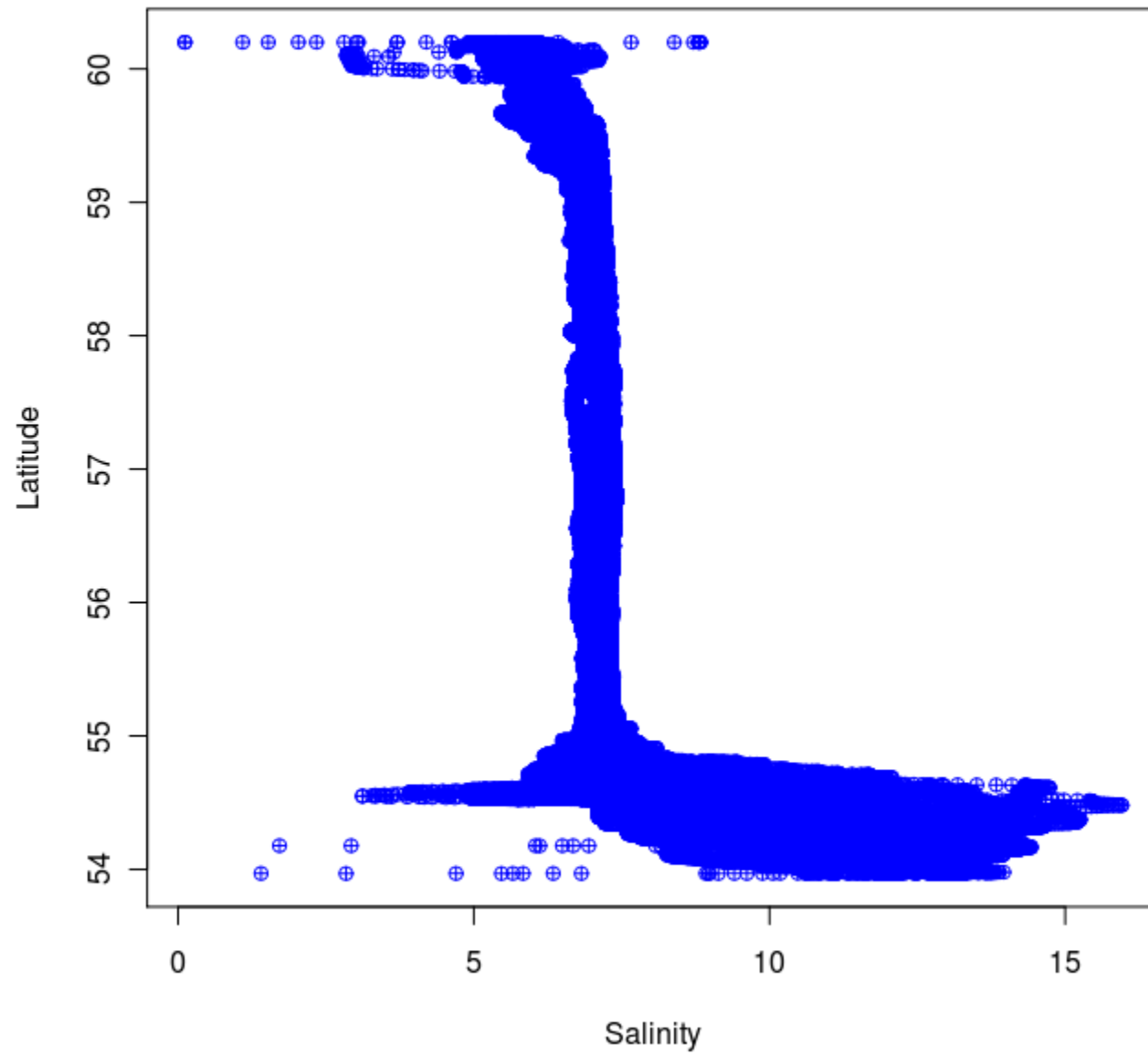
A1 $f(x)$ Σ = Date

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
1	Date	gd	Time	qt	Lat	qla	Lon	qlo	Wsample	qw	Sospd	qsp	Sosal	qsal	Sotemp	qte	Soxtemp	qxte	Sochflf	qchfl	Soppcf	qpcf	Sotur	qtur	
2	2011-05-10	2	01:39:46	2	53.96945	2	10.90168	2	0	2	13.1	2	5.662	2	16.168	2	11.433	4	9.646	2	-9999	4	4.2898	4	
3	2011-05-10	2	01:40:05	2	53.9704	2	10.90295	2	0	2	13.3	2	11.482	2	12.199	2	11.436	2	2.8938	2	-9999	4	1.8798	2	
4	2011-05-10	2	01:40:26	2	53.97142	2	10.90422	2	0	2	13.6	2	11.624	2	11.874	2	11.459	2	2.5662	2	-9999	4	1.687	2	
5	2011-05-10	2	01:40:45	2	53.97245	2	10.90545	2	0	2	13.8	2	11.627	2	11.789	2	11.473	2	2.6026	2	-9999	4	1.4942	2	
6	2011-05-10	2	01:41:05	2	53.9735	2	10.90675	2	0	2	14	2	11.619	2	11.747	2	11.48	2	2.639	2	-9999	4	1.446	2	
7	2011-05-10	2	01:41:26	2	53.9746	2	10.90807	2	0	2	14.3	2	11.597	2	11.729	2	11.506	2	2.6208	2	-9999	4	1.3978	2	
8	2011-05-10	2	01:41:45	2	53.97565	2	10.90932	2	0	2	14.4	2	11.583	2	11.723	2	11.507	2	2.6208	2	-9999	4	1.3496	2	
9	2011-05-10	2	01:42:05	2	53.9767	2	10.91058	2	0	2	14.4	2	11.567	2	11.722	2	11.576	2	2.6208	2	-9999	4	1.3014	2	
10	2011-05-10	2	01:42:25	2	53.97775	2	10.91207	2	0	2	14.5	2	11.565	2	11.728	2	11.647	2	2.639	2	-9999	4	1.3014	2	
11	2011-05-10	2	01:42:45	2	53.97872	2	10.91367	2	0	2	14.6	2	11.566	2	11.735	2	11.743	2	2.73	2	-9999	4	1.2532	2	
12	2011-05-10	2	01:43:05	2	53.97965	2	10.91538	2	0	2	14.8	2	11.556	2	11.759	2	11.832	2	2.6936	2	-9999	4	1.2532	2	
13	2011-05-10	2	01:43:25	2	53.98052	2	10.91705	2	0	2	14.9	2	11.543	2	11.804	2	11.892	2	2.7664	2	-9999	4	1.3496	2	
14	2011-05-10	2	01:43:45	2	53.98147	2	10.91892	2	0	2	15	2	11.544	2	11.861	2	11.925	2	2.7846	2	-9999	4	1.3496	2	
15	2011-05-10	2	01:44:05	2	53.98238	2	10.92068	2	0	2	15.1	2	11.553	2	11.933	2	11.986	2	2.8392	2	-9999	4	1.3496	2	
16	2011-05-10	2	01:44:25	2	53.98332	2	10.92245	2	0	2	15.1	2	11.563	2	12	2	12.024	2	2.8756	2	-9999	4	1.3496	2	
17	2011-05-10	2	01:44:45	2	53.98423	2	10.9242	2	0	2	14.8	2	11.582	2	12.043	2	12.047	2	2.9302	2	-9999	4	1.3978	2	
18	2011-05-10	2	01:45:05	2	53.9851	2	10.9259	2	0	2	14	2	11.604	2	12.095	2	11.938	2	2.9484	2	-9999	4	1.3978	2	
19	2011-05-10	2	01:45:26	2	53.98593	2	10.92752	2	0	2	13.4	2	11.614	2	12.134	2	11.785	2	2.9848	2	-9999	4	1.3978	2	
20	2011-05-10	2	01:45:45	2	53.98668	2	10.92897	2	0	2	12.2	2	11.622	2	12.165	2	11.686	2	2.9484	2	-9999	4	1.446	2	
21	2011-05-10	2	01:46:05	2	53.9874	2	10.9303	2	0	2	11.2	2	11.644	2	12.139	2	11.63	2	2.912	2	-9999	4	1.446	2	
22	2011-05-10	2	01:46:26	2	53.98808	2	10.93155	2	0	2	10.4	2	11.684	2	12.066	2	11.466	2	2.8028	2	-9999	4	1.3978	2	
23	2011-05-10	2	01:46:45	2	53.9887	2	10.93267	2	0	2	9.7	2	11.73	2	11.974	2	11.411	2	2.73	2	-9999	4	1.3496	2	
24	2011-05-10	2	01:47:06	2	53.98928	2	10.93378	2	0	2	9.2	2	11.744	2	11.886	2	11.328	2	2.6572	2	-9999	4	1.3496	2	
25	2011-05-10	2	01:47:26	2	53.98983	2	10.93482	2	0	2	8.5	2	11.735	2	11.786	2	11.295	2	2.5844	2	-9999	4	1.3496	2	
26	2011-05-10	2	01:47:45	2	53.9903	2	10.93572	2	0	2	7.9	2	11.72	2	11.686	2	11.292	2	2.5116	2	-9999	4	1.205	2	

Sheet1

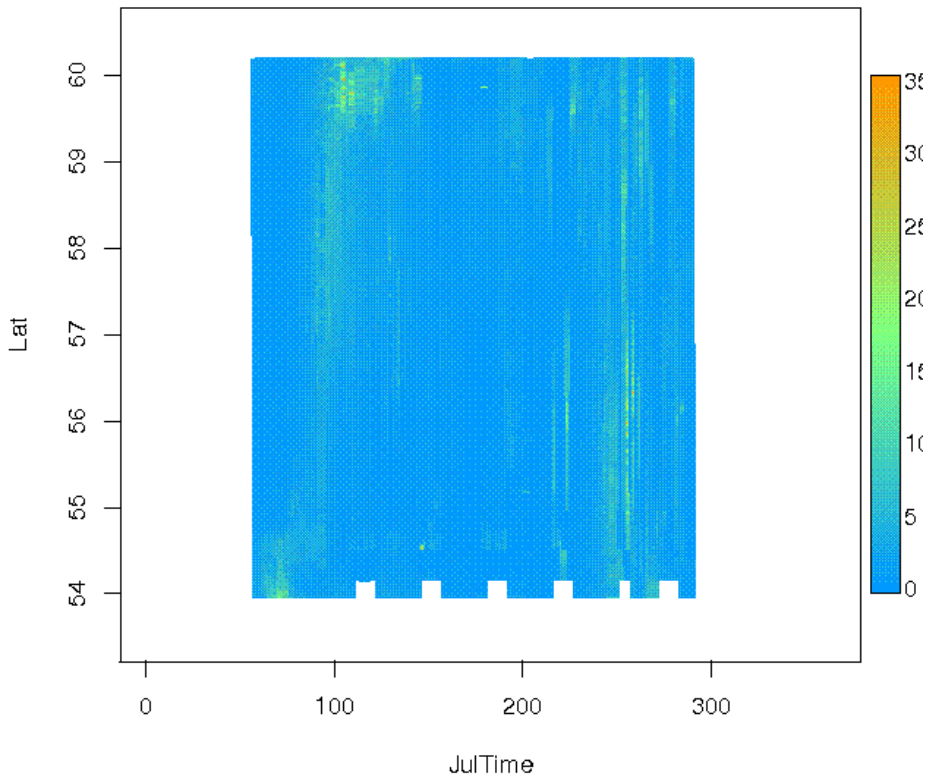
flag - File Browser fm20110510T043857Z... GNU Image Manipulati...

Salinity, Spring 2011

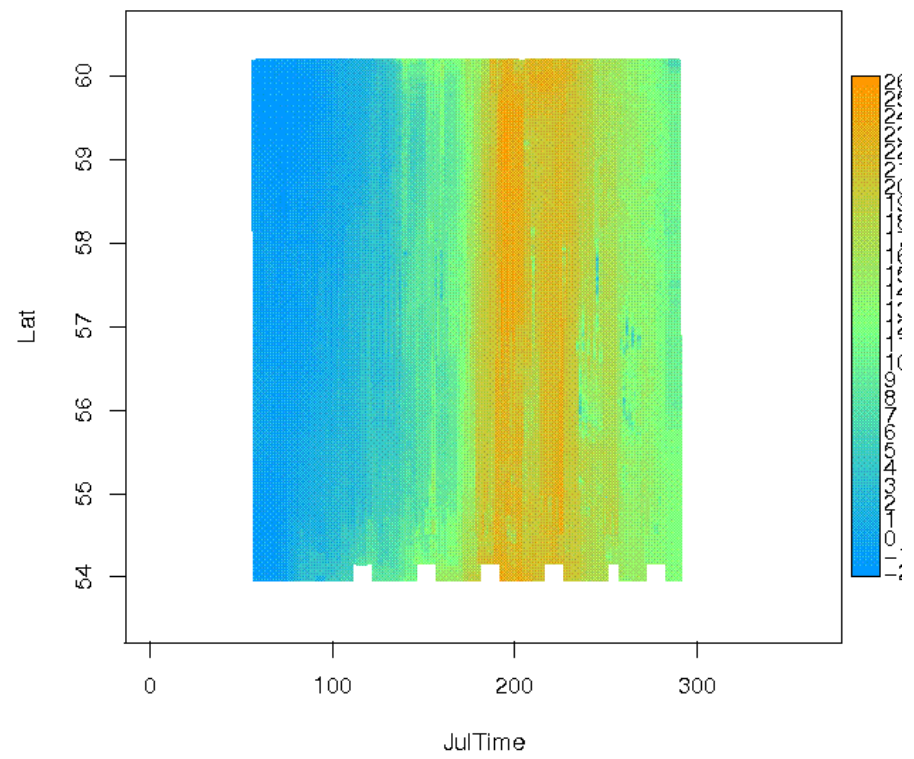


FINNMAID 2010: Extent and quality

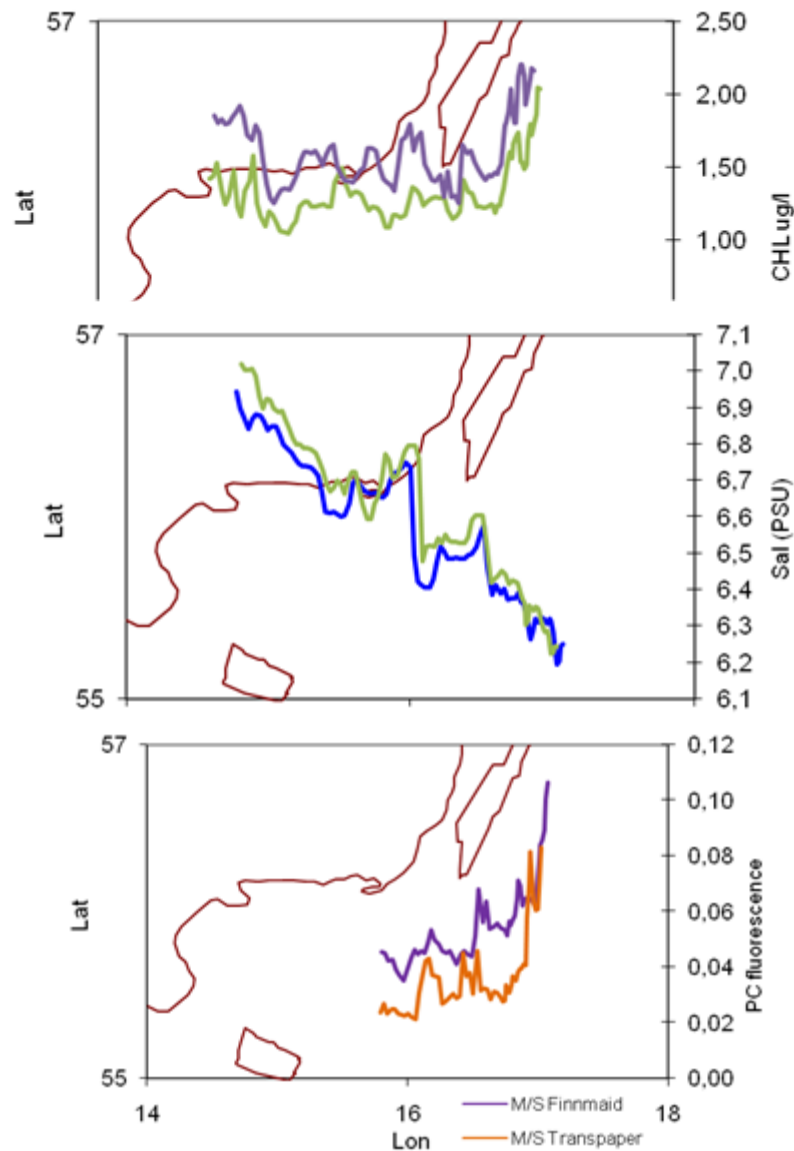
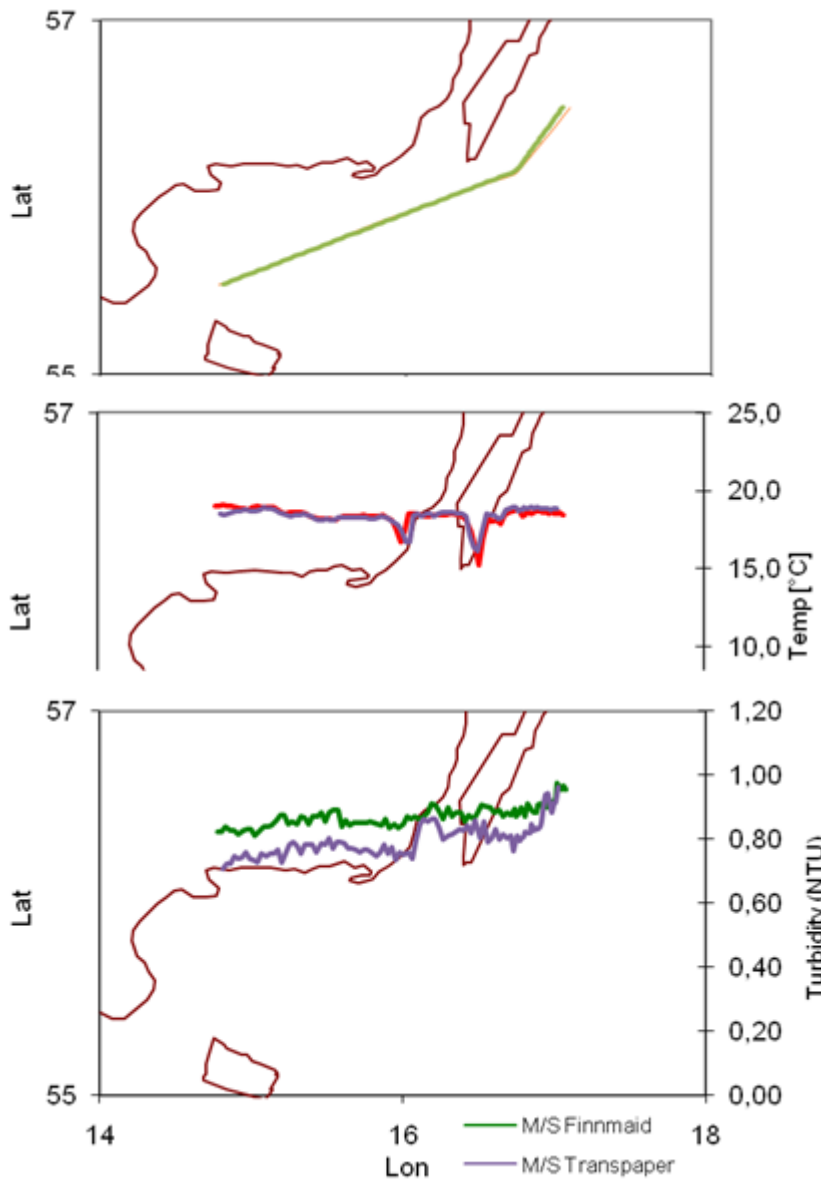
FINNMAID Chlorophyll 2010



FINNMAID Temperature 2010

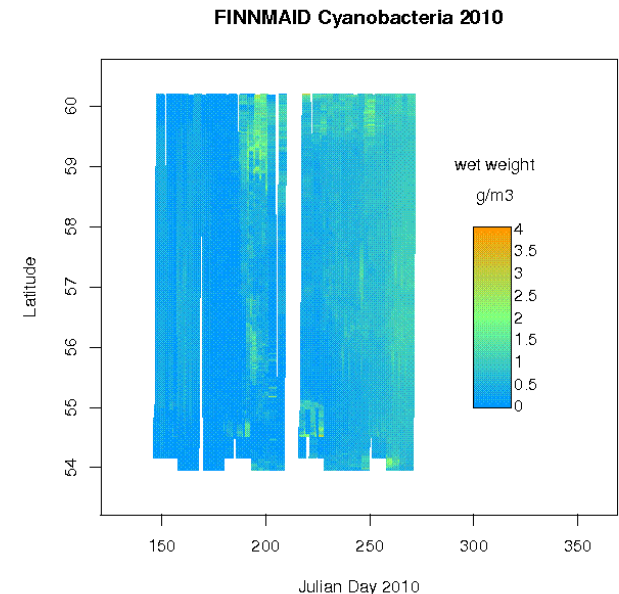
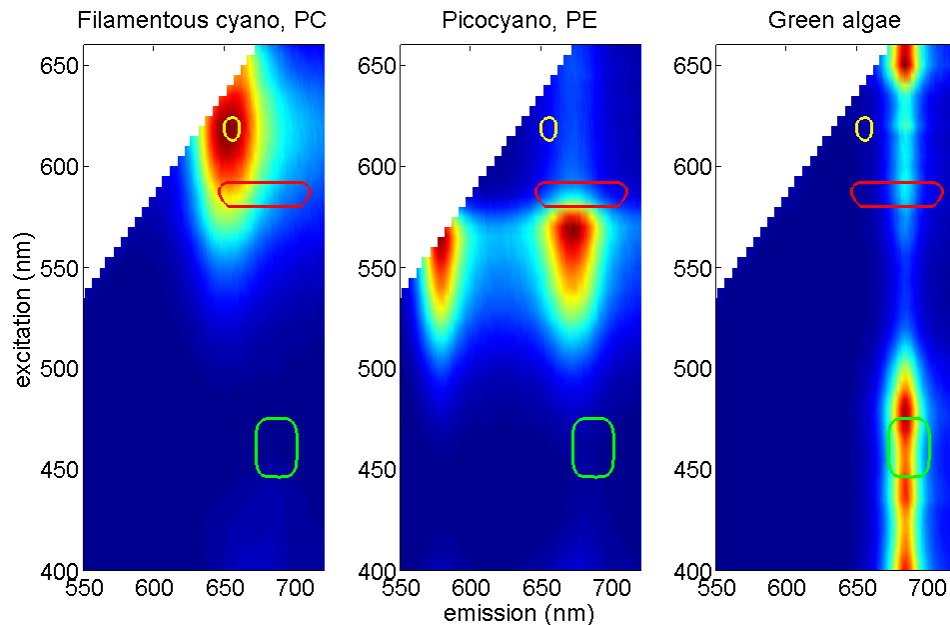


Comparison of TRANSPAPER and FINNMAID on 23.8.2010, time diff 16 h



New sensors in FerryBox systems – experiences in SYKE

Sensor:	Phycocyanin fluorometer
Aim:	Detection of harmful blooms of filamentous cyanobacteria
Status:	Operational since 2005, installed in 4 ferries
Challenges:	Maintenance and calibration more difficult than for Chl a fluorometers Selection of wavelengths
Actions:	Development of calibration protocols Derivation of ecological information



New sensors in FerryBox systems – experiences in SYKE

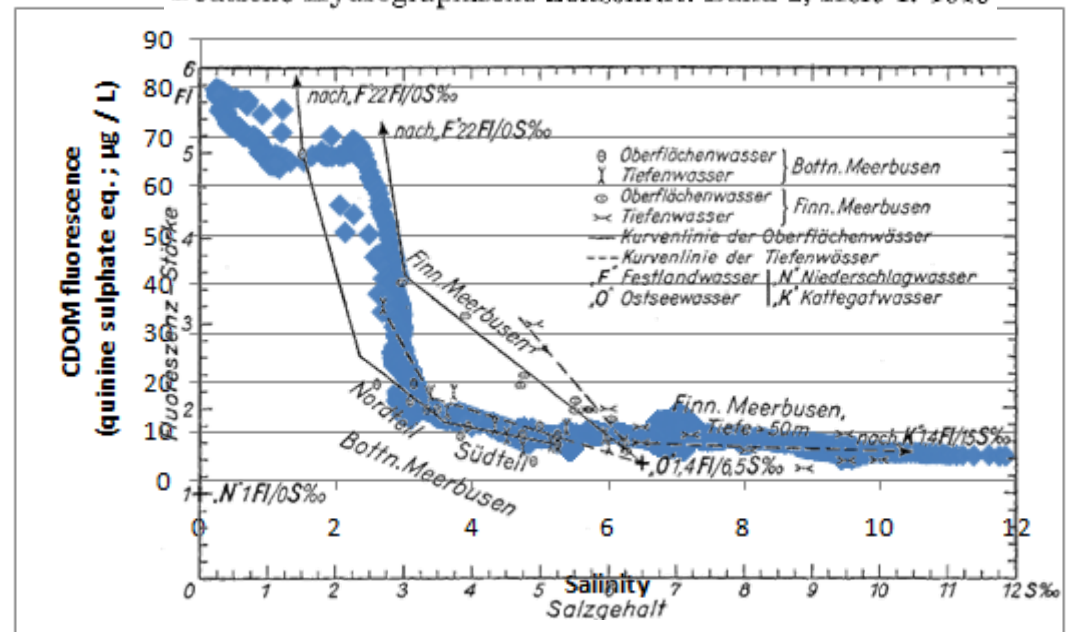
Sensor:	CDOM fluorometer
Aim:	Detection dissolved organic matter, humic material
Status:	Operational since 2011
Challenges:	Selection of wavelengths Dynamic fluorescence – absorption – DOC relationship
Actions:	Collection of calibration data-set



Fluoreszenz und Gelbstoff im Bottnischen und Finnischen Meerbusen*

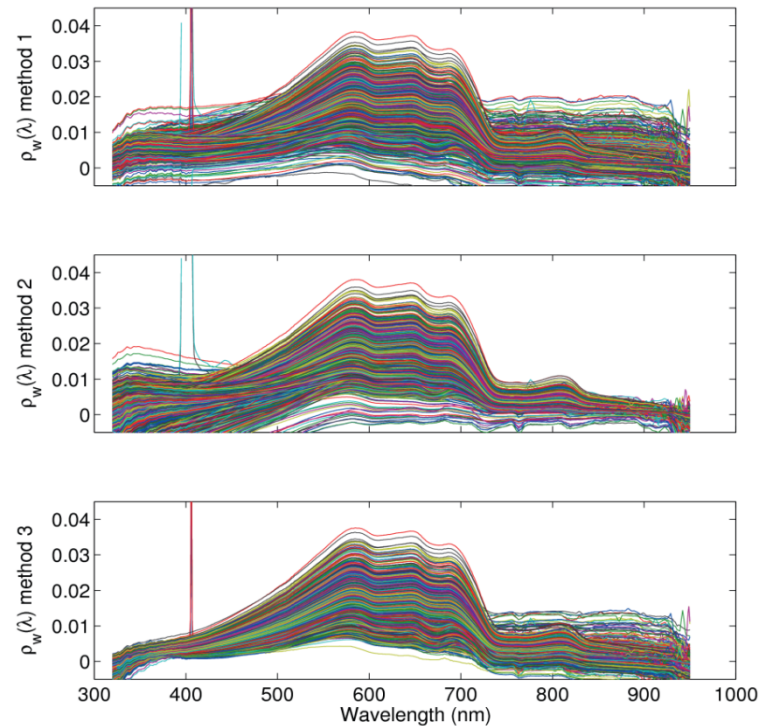
Von Kurt Kalle

Deutsche Hydrographische Zeitschrift. Band 2, Heft 4, 1949



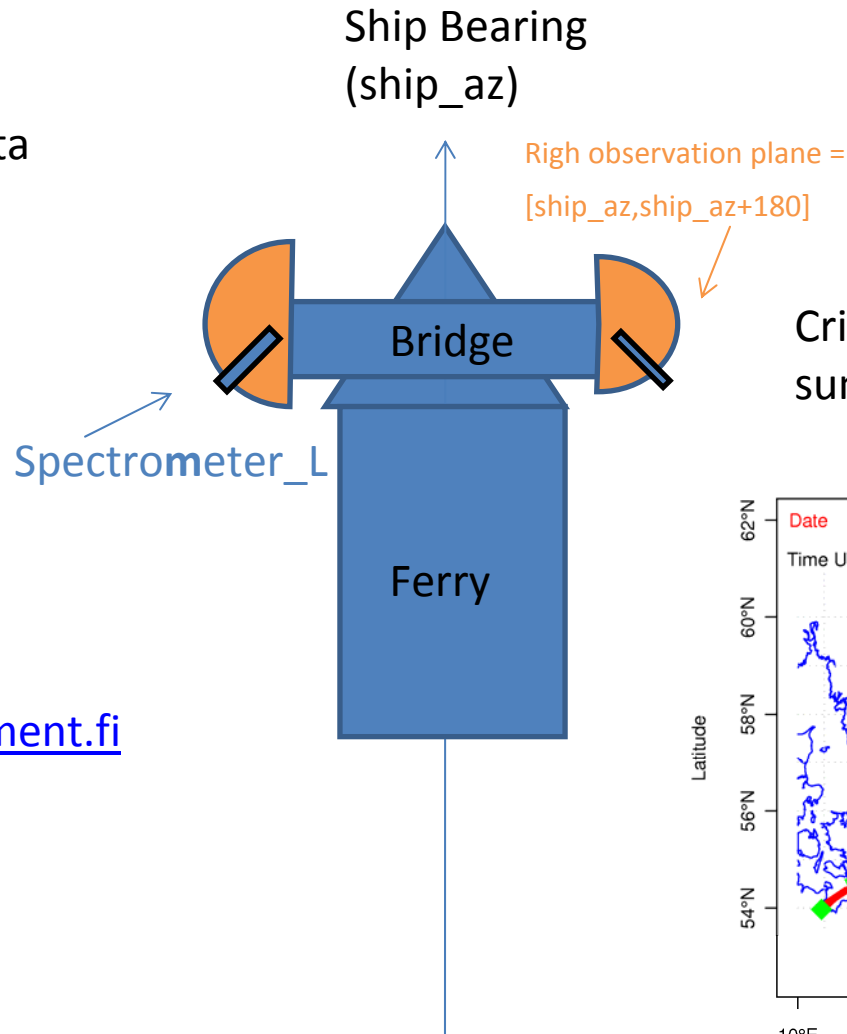
New sensors in FerryBox systems – experiences in SYKE

Sensor:	Reflectance
Aim:	WQ products derived from reflectance data
Status:	Tests carried out in research vessel and ferry 2009-11
Challenges:	Data analysis Interfacing with FB data
Actions:	Software tests, demonstration campaigns 2012



Spectrometers on the ferry

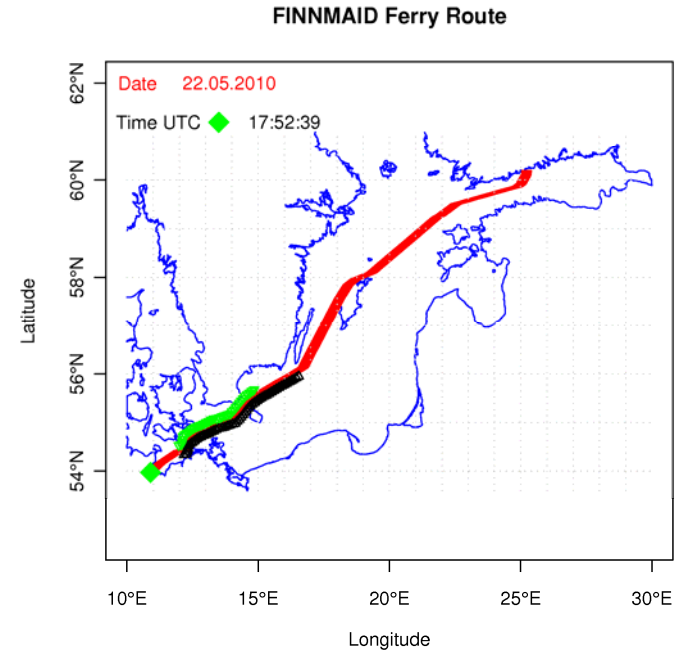
Collect spectral data every 15 seconds



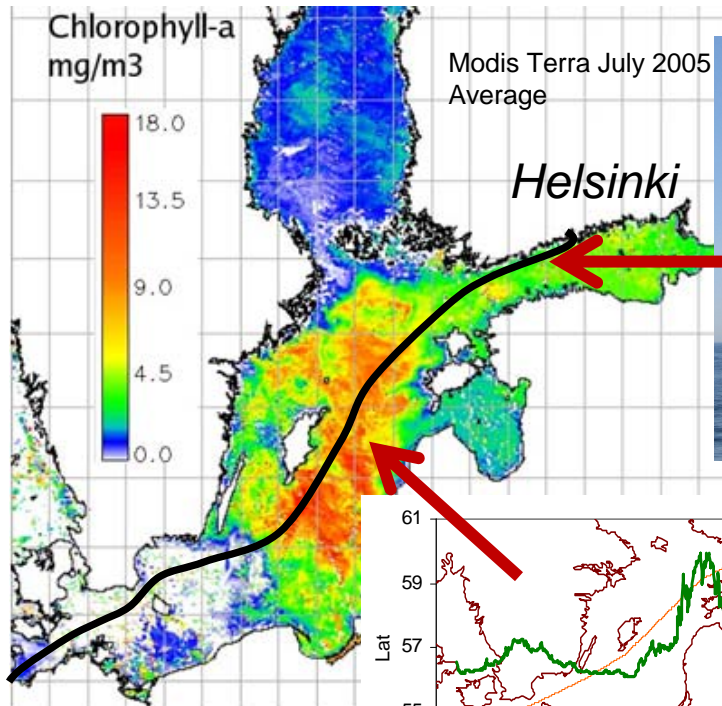
Criteria:
sun elevation $> 30^{\circ}$

PROTOCOL FP7 Project
Stefan.Simis@environment.fi

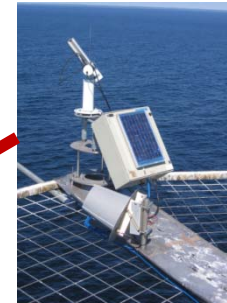
John Olsson Poster



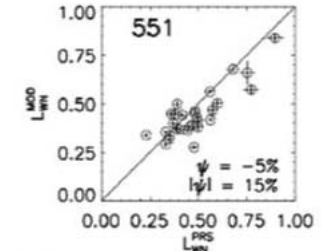
Combination of different sources are used for Ocean Colour validation



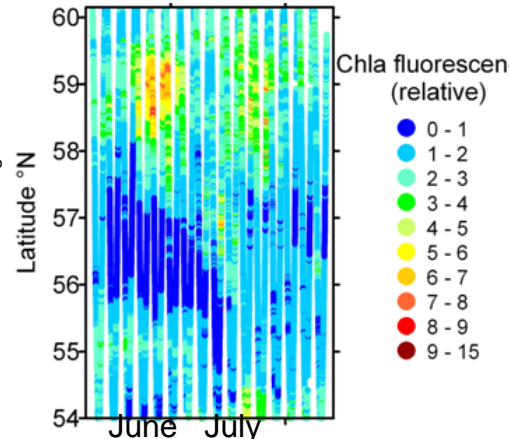
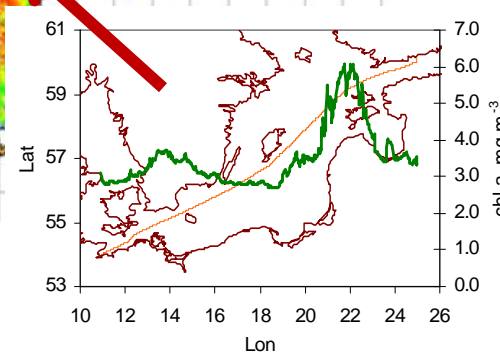
Helsinki Lighthouse



SeaPrism/Aeronet
with EU-JRC



Algaline monitoring
on FINNMAID
biweekly



Chlorophyll-a, Gulf of Finland

