Comparison of CoastColour products with in situ observations in the Baltic Sea

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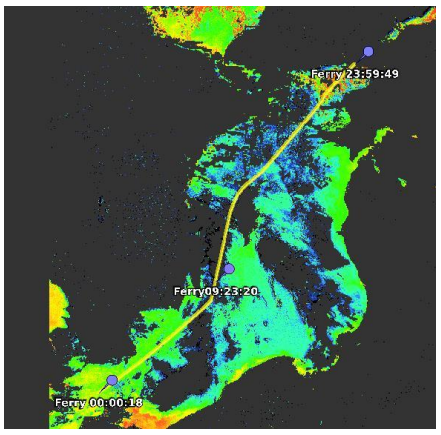

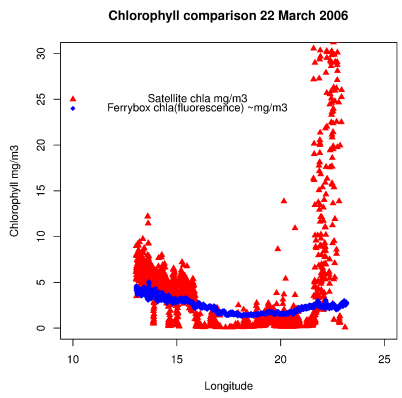

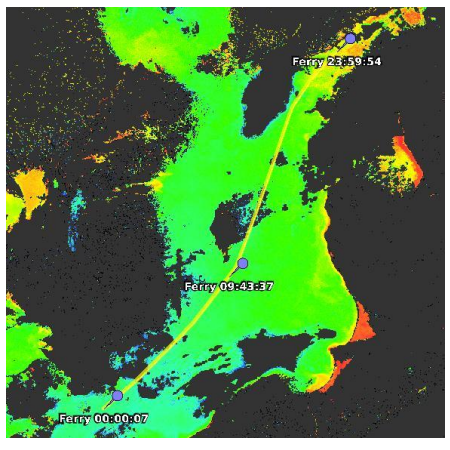

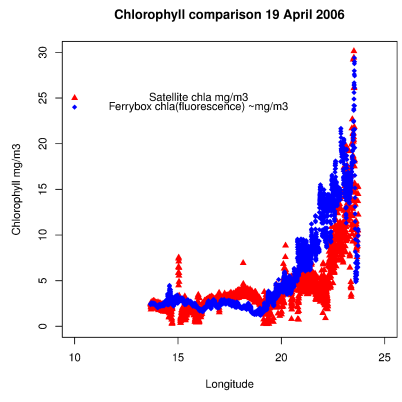

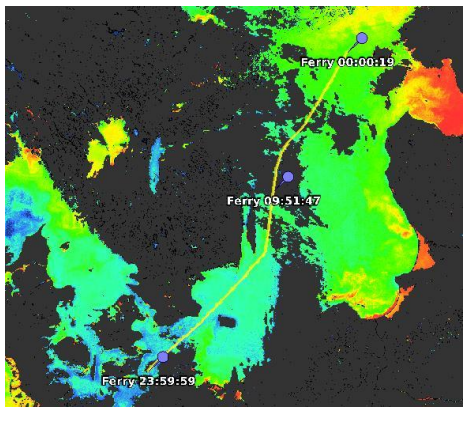

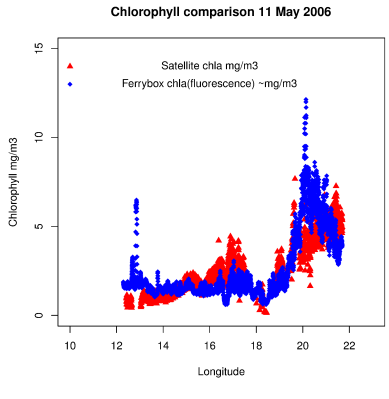

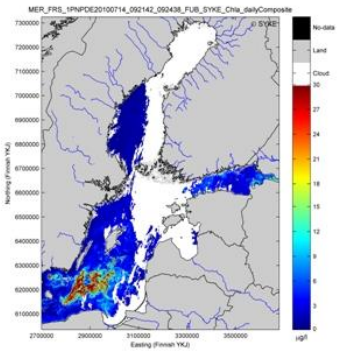

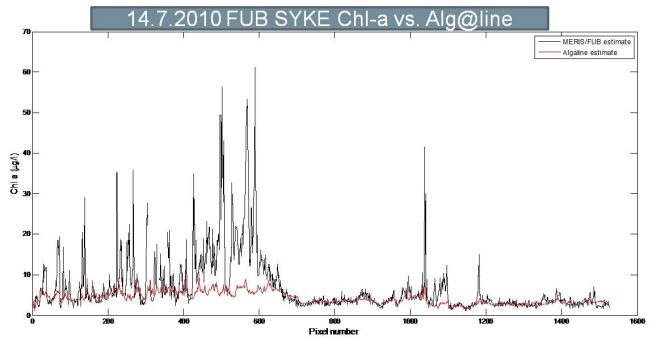

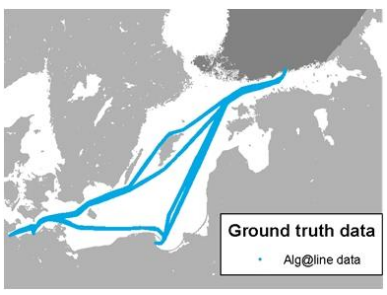

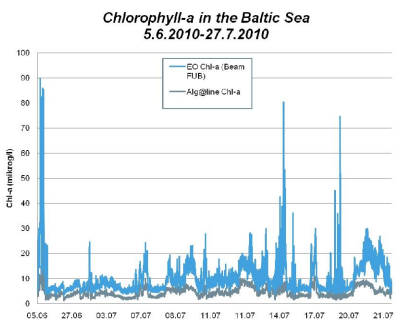

The COASTCOLOUR project's Case 2 products produced from the MERIS instrument for remote sensing data of the coastal zone of the Baltic Sea in the year 2006. NetCDF files were fetched by FTP from the COASTCOLOUR Website. The chlorophyll concentrations from the COASTCOLOUR products were compared against Alg@line ferrybox monitoring records for the same day. The recording time for the MERIS records are pointed along the route and on the chlorophyll maps as yellow lines. In this comparison, the transect along the ferry line from Helsinki to Trawemûnde was used. The nominal depth for the water intake in ferrybox system is 5 m and spatial resolution is about 250m.The analysis was carried out with BEAM 4.9 and R-statistical softwares.

During the spring bloom algae start to grow on the water surface, what shows well in the comparison on the 22 of March 2006 in the uppermost image. The high concentrations detected by COASTCOLOUR product are likely to be affected by partial ice cover on the pixels near Helsinki harbour. When algae are well mixed in the upper water column, the satellite and ferrybox data match well and detect same patterns along the ship route (19.4.2006 and 11.5.2006).

For the year 2010 the analysis was carried out in SYKE with Meris L1b data. Chlorophyll analysis was based on FUB/WeW processor (Water processor by Free University of Berlin) after Smile correction.

During the summer 2010 satellite observations tend to be higher, although the pattern fits well with Alg@line records. Especially on 14.7.2010 MERIS scene detects the surface floating cyanobacteria blooms as high chlorophyll concentrations whereas Alg@line records at 5m show results of mixed water column. Nevertheless, both datasets show increase in chlorophyll concentrations on regions with high cyanobacteria biomass.

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SYKE

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SEVENTH FRAMEWORK PROGRAMME