

## ***Interactive comment on “Evaluation of MERIS products from Baltic Sea coastal waters rich in CDOM” by J. M. Beltrán-Abaunza et al.***

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This is an interesting paper well placed within this journal. It is a bit long and quite wordy, so the authors should consider shortening it. I agree with the comments by reviewer Zibordi, especially comment 5 and 7 (considering ICOL). The writing style may need some checking here and there. Some examples:

“The use of MERIS full resolution Level 1b 3rd reprocessing data in coastal waters rich in CDOM, with additional corrections for smile, equalization of coherent noise and correction of the adjacency effect using ICOL, has shown to improve the accuracy of the MERIS reflectance and derived water products, when compared to sea-truthing data.”

C824

Is it meant that the 3rd reprocessing is improving compared to the 2nd reprocessing? (This was, (if I remember correctly) not the finding of the MERIS validation team)

“Lower in situ chlorophyll concentrations (mainly < 2.5 mgm<sup>-3</sup>, Fig. 4) seem to have an influence on the accuracy”

What is meant by this?

“The viable macro pixel retrieval ratio”

I think this term is too complex

Further comments: In a recent publication as e.g. by attila (2013) ICOL was discarded based on contradictory literature evidence. Also in grey literature such as (<http://upcommons.upc.edu/pfc/bitstream/2099.1/7013/2/LaTeX1.pdf>) some evidence does not suggest that ICOL is really improving retrievals in all parts of the Baltic Sea and some evidence does (e.g.)[http://www.peer.eu/fileadmin/user\\_upload/opportunities/metier/course6/c6\\_water\\_quali](http://www.peer.eu/fileadmin/user_upload/opportunities/metier/course6/c6_water_quali) Of course the difficulty of past publications is that while comparing different processors, one has to take into account that over the years different versions of each module have been published including the processing to L1A which makes it quite difficult to compare results over time and between publications. Therefore I would like to suggest to weaken the suggestion to use ICOL for all Baltic waters or to firmly underpin the conclusion with data.

Page 2170: How was it tested that the ICOL Processor had worked as expected? “Statistics were gathered that MERIS reflectance retrieval had improved for each processor”: Where could I find these results?

Page 2172 line 16: use of ICOL increases the number of viable macro pixels for MEGS and FUB. Could you explain the mechanism that caused this?

In the discussion, errors due to the fact that ICOL may introduce additional uncertainties are not discussed. Could you add this?

C825

I think the paper needs quite firm statements about the training range of the neural networks. They are referred to but for the discussion the info needs to be on the table. It would be interesting to see the comparison as visualized over the transects to see which processor is best capable to reproduce the spatial pattern.

Page 2176: FUB has a rather consistent  $\sigma_t$ -set over the whole reflectance spectrum (Table 6), and has therefore the most consistent spectral shape, i.e. the MNB do not change as drastically as for the other processors. Since this is based on averages per band instead of comparing spectra as a whole, this conclusion is a bit tricky.

Page 2181: For future algorithms development in waters affected by high CDOM absorption it is therefore recommended to decouple the aCDOM retrieval from the retrieval of the CHL absorption at 443 nm (where high absorption of both aCDOM and CHL coincide), and instead, to use other spectral features of phytoplankton pigments in the longer wave-lengths for chlorophyll retrieval, e.g. the chlorophyll peak in the red at about 665 nm.

I'm afraid this will not work very well since the signal is low (little backscattering) and the absorption in this band is quite high.

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Interactive comment on Ocean Sci. Discuss., 10, 2157, 2013.