Ocean Science
Discussions

Interactive comment on "Study on organic matter fractions in the surface micro layer in the Baltic Sea by spectrophotometric and spectrofluorometric methods" *by* Violetta Drozdowska et al.

Violetta Drozdowska et al.

drozd@iopan.pl

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Thank you very much for reviewing the manuscript and your comments.

I'm making corrections to Reviewer #1 so in 1-2 days I'll put my response to Reviewer #1 and it'll satisfy you comments as well.

Now, I'm refering to the comments of the Reviewer #3.

" So agreeing with most of the commands of my respectable anonymous peer-review

colleagues, I will just comments on thing which I did not see in their comments. "

1. The fluorescence intensities A, C M and T should be explained in the abstract. Something simple like "fluorescence intensities at Coble classification peaks" should be enough to give some hint to the reader what they are. I'll put into the abstract the information about naming of A, C, M and T as "fluorescence intensities at Coble classification peaks".

2. Units in the figures should be presented in [ ] braces. I put the all units in the all figures '[]' brackets, except Fig. 1.

3. Date format in Table 1 is certainly not something most English native speakers will recognize. Because of the US/UK dichotomy (09/11/2001 versus 11/09/2001), I suggest using month names explicitly (11 September 2001). The hyphen in "October'2015" is not necessary (at least in two places). One uses it only to shorten the year (October '15). Thank you, I wrote the name of date in Table 1 explicitly.

4. I commend the authors for using unitless practical salinity (as all the relevant standards have it). However, the word "practical" should be added somewhere before salinity to make it obvious that the salinity was not absolute. Thank you. I just put the name "Practical salinity" – as a description of the X axes in Fig.3 and Fig.5.

I put the corrections referring to Reviewr #2 and #3 together to the Corrected Manuscript.

Please also note the supplement to this comment:
http://www.ocean-sci-discuss.net/os-2017-4/os-2017-4-AC2-supplement.pdf

Interactive comment on Ocean Sci. Discuss., https://doi.org/10.5194/os-2017-4, 2017.
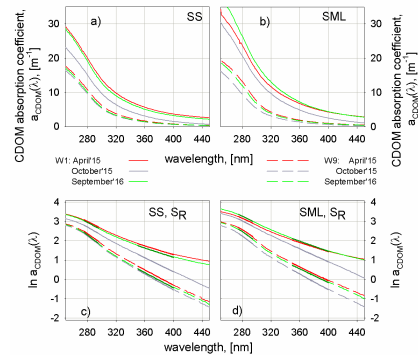
Figure 2. Absorption spectra - collected during three Baltic cruises at 28th April, 2015 (red lines), 15-16th October, 2015 (grey) and 11th September 2016 (green) - for W1 (solid lines) and W9 (dash lines) stations – presented in linear scale (top panels: a, b). Natural log-transformed absorption spectra with best-fit regression lines for two regions (275-295 nm and 350-400 nm) (bottom panels: c, d).

Fig. 1.

C3

Figure 3. The relationship between salinity and: (a) the spectral slope coefficient, S, measured in the 300-600nm, (b) the slope ratio $S_R = S_{275-295} / S_{350-400}$, and (c) the relative changes in the molecular weight, MW (E_2: E_3) for SS; and: (d), (e) and (f) for SML, respectively.
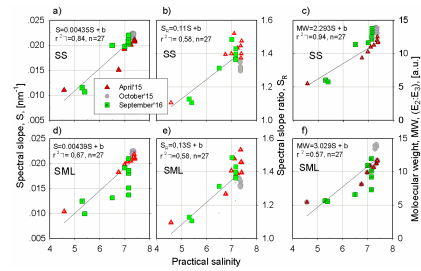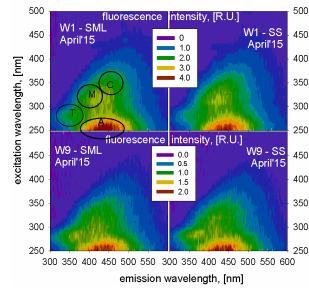

Fig. 2.

C4

Figure 4. Examples of 3D fluorescence spectra (EEM) of the samples collected at stations W1, near the Vistula River outlet (top panels) and W9, Gdansk Deep (bottom panels), 28 April 2015.
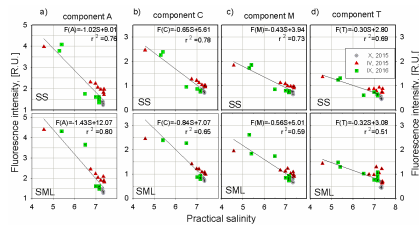
Fig. 3.

C5

Figure. 5. Dependence of the fluorescence intensity of the main FDOM components: a) A, b) C, c) M and d) T as a linear relation to salinity for the samples from the sub-surface water (SS; top panels) and the sea surface microlayer (SML; bottom panels).

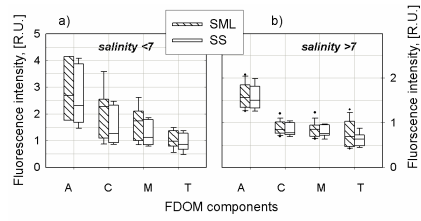**Fig. 4.**

Figure 6. Dependence of the fluorescence intensity of the main FDOM components in SML and SS as the box plots for (a) coastal water (salinity <7) and (b) open sea (salinity >7).

Fig. 5.

C7

Figure. 7. Dependence of percentage contribution of the main FDOM components as the box plots for (a) the sub-surface water, SS and (b) the sea surface microlayer, SML; for the coastal waters (salinity <7) and open sea (salinity >7).
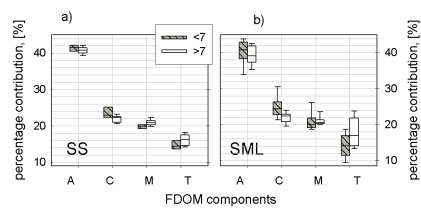

Fig. 6.

C8