Ocean Science
Discussions

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comment

Interactive comment on "Characteristics of Chromophoric and Fluorescent Dissolved Organic Matter in the Nordic Seas" *by* Anna Makarewicz et al.

Anonymous Referee #1

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Abstract 1) page 2 line 45 why you concluded that phytoplankton is the main source of protein-like fluorescence based on a r2=0.36?

2) page 3, line 51. how did you arrive to this conclusion? of the Arctic Ocean (Arrigo et al., 2008), which could potentially contribute to increased production of autochthonous (marine) dissolved organic matter (DOM). what about the ice algae? they will disappear and they also contribute to CDOM

3) page 3 line 65, which percentage to carbon budget? DOM presents a considerable role in the carbon budget of...

4) line 71. please add Pegau reference to this list Hill, 2008; Granskog et al., 2007,

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[Discussion paper]

2015).

5) line 73 sorry this is not conclusive. UV can also produce radicals after interacting with CDOM resulting in more toxic and damaging effects! and preserves marine ecosystem from harmful ultraviolet radiation

6)line 78, what fraction of DOM is CDOM? what fraction of CDOM is FCDOM?

7) page 4 line 100, upstream you meant? changes associated with CDOM in the areas downstream of the Atlantic Water inflow region

8) page 8 line 209, S between 300 and 600 nm line 218 why additional acdom375 and acdom443 when actually the range is 300 and 600 nm? line 224 why to use micron-1 use nm-1

9)page 9 equation 3, why the use of spectrophometry for chl? this is an old technique that has a larger error and is less sensitive than fluorometry or HPLC. What is the error of this emthod? Did you compare this method with HPLC or fluorometry non-acidification technique?

10) page 9 equation 4, I disagree. You cannot mix apples with bananas. DOC is not DOM unless you estimate DOM based on DOC with a curve or factor., same for equation 5 line 305, how did you calculate the offset of wetstar-3 fluorescence measurements? reference with respect to nanopure? constant temperature?

11) S slope without units?

12) figure 3 is hard to interpret due to the vertical variability of properties

13) many questions but fewer explanations or explanation attempts. beyond sampling aliasing, Why not acdom350 not well related to DOC? why not links between s275-295 and DOC? what is the linkage between particulate iron and absorption slopes?

Interactive comment on Ocean Sci. Discuss., https://doi.org/10.5194/os-2017-100, 2018.