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Ocean Science Discussions

Interactive comment on "Seasonal variability in mass, nutrients and DOC lateral transports off Northwest African Upwelling System" *by* Nadia Burgoa et al.

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General CommentsÂă: The authors have tried to analyse the lateral export of nutrients and organic matter in the southern part of the northwest Africa region considered as the highly dynamic upwelling ecosystem.

In this accepted paper, various variables are analyzed in various ways to investigate factors "mainly ocean circulation" controlling the variability in mass, nutrient and DOC. There may be interesting findings, it may help to complete our understanding of the connection between the coastal band and the oligotrophic open ocean in terms of the export of mass and bio-optical proprieties for two distinct periods fall and spring.

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Discussion paper

Main comments:

1- In my opinion, talking about seasonality seems very exaggerated as long as we have two surveys that have been carrying out during different periods of two different seasons and do not even cover the entire season. In this sense, I prefer that you speak about the comparison of the results obtained during two hydrographics cruises realized at different dates.

2- What happens during summer and winter seasons? Fall and spring are only transitional seasons and the maximum mass, nutrients and DOC lateral transports occur mainly during upwelling seasons summer and winter respectively north and south of Cap blanc where the system is highly dynamic!

3- I believe and I am aware that having hydrographic data covering the whole seasonal cycle is very difficult, but fortunately we have the outputs of the bio-geochemical models and satellites data of the ocean color that can complement your results.

4- Validating the geostrophic flow with SLA in the Figure A9: Superimpose the estimated velocities with SLA can not validate the results, it only gives an idea about the general pattern. I thinks, it's better to make a scatter-plots of the estimated velocity by the inverse model and the derived geostrophic AVISO velocity by transect or all transects can be gathered together for both surveys taken separately.

Minors: The paper can be concise, avoid too much description! The introduction is long, some sentences can be summarized especially in relation to the description of the currents!

Please also note the supplement to this comment:
https://www.ocean-sci-discuss.net/os-2019-91/os-2019-91-RC2-supplement.pdf

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