

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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We really appreciate the comments made by the reviewer 2, that have helped us to produce a clearer version of our manuscript. We have followed them and have introduced several modifications in the paper according to his comments. In the next lines we give a detailed reply about how we have handled every comment.

Hereafter, the author's replies are presented in capital letters.

Main comments:

1- In my opinion, talking about seasonality seems very exaggerated as long as we

C1

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.

WE AGREE WITH THE REFEREE'S COMMENT. THE TITLE WILL BE CHANGED TO "MASS, NUTRIENTS AND DOC LATERAL TRANSPORTS OFF NORTHWEST AFRICA DURING FALL 2002 AND SPRING 2003".

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!

WE AGREE WITH THE REVIEWER BUT MORE REPETITIONS WITH THE SAME QUALITY AND DATA DISTRIBUTION ARE NOT AVAILABLE IN THE REGION. THE MAIN STRENGTH IN THIS ANALYSIS IS RELATED TO ITS OBSERVATIONAL NATURE AND MAKING AVAILABLE THESE RESULTS WOULD INCREASE THE BACKGROUND KNOWLEDGE IN THE REGION.

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.

WE INSIST IN OUR IDEA THAT THIS MANUSCRIPT IS RELEVANT BECAUSE OF ITS OBSERVATIONAL NATURE, AND THAT'S THE MAIN MOTIVATION TO PUBLISH THIS DATASET.

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 think, 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

C2

transects can be gathered together for both surveys taken separately.

WE PARTIALLY AGREE WITH THE REVIEWER. WE ARE INTERESTED IN AN AVERAGE VALIDATION OF THE RESULTS, AS LONG AS BOTH DATASETS HAVE A TIME DEPENDENCY SLIGHTLY DIFFERENT FROM EACH OTHER AND A DIRECT VALIDATION MIGHT BE MISLEADING. IN ANY CASE, WE WILL PRODUCE A NEW FIGURE TO COMPARE THE VELOCITY FROM THE INVERSION WITH THE VELOCITY FROM THE ALTIMETER DATA.

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!

WE THINK IT IS WORTH PROVIDING DETAILS ABOUT A ZONE THAT HAS HISTORICALLY BEEN UNDERSAMPLED, SOUTH OF THE CANARY ISLANDS. IN ANY CASE, WE HAVE FULLY PROOFREAD THE MANUSCRIPT TO AVOID ANY REDUNDANCY IN THE TEXT AND TO MAKE IT MORE FLUENT AND CLEARER.

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