

Biogeosciences Discuss., author comment AC3
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Reply on RC3

Liliane Merlivat et al.

Author comment on "Physical mechanisms for biological carbon uptake during the onset of the spring phytoplankton bloom in the northwestern Mediterranean Sea (BOUSSOLE site)" by Liliane Merlivat et al., Biogeosciences Discuss., <https://doi.org/10.5194/bg-2021-315-AC3>, 2022

RC3: 'Reply on RC2', Emmanuel Boss, 28 Dec 2021 reply

I would like to add that it would be very helpful, as a diagnosis, to see a time series of $dDIC/dt$ and NCP, and, in general, time series spanning a year where possible (or at least from Nov. to May).

In our paper (Merlivat et al, 2018), we report the carbon data measured at the Boussole buoy over the period 2013-2015. We show in figure 2f the annual variation of $pCO_2@ 13^\circ C$ which is a proxy for DIC. We observe for the years 2013-2015, that the initial spring decrease in DIC occurs in March-April, which is in agreement with the results for the years 2016-2019.

There have been several paper comparing NCP from chemistry and from optics (e.g. from the NABE and EXPORTS experiments) and it may be useful to compare with those.

In our paper, we have confined ourselves to stating the NCP values estimated at the nearby Dyfamed station based on oxygen or carbon-14 measurements at time scales of the order of months. At the present stage, we do not intend to extend the analysis of our findings by comparison with the results of experiments carried out in other oceanic environments.

Also, the labels on the left-hand side of Fig. 3 are cut

This has been corrected