

Dear Editor:

We are grateful for all the comments made by the reviewer. After giving more importance to numerical modelling outputs and comparing them with the nutrient fluxes obtained from in situ observations, we have included an additional paragraph at the discussion with the aim to explain the criteria used in the selection of the three key points in the comparison of model and observation at each transect. We hope this final change is in accordance with the comment made by the reviewer.

Reply to reviewer #1

Regarding the question posed by the reviewer that says:

In the comparison between observed and assimilated nutrient fluxes, the authors selected one “key point” at each of the northern, western, and southern sections. Could the authors justify their choices of the “key points”? Are these points more representative than other points at each section or than the accumulated nutrient fluxes of each section?

We have included this paragraph (at line 463) to explain it:

These locations are chosen as the most representative points of each transect. Nutrient profiles at each transect are analyzed for both seasons and the key points are selected where the three nutrients profiles are consistent with their average distribution. In the case of northern and southern transects, the key points are located at the intermediate point between the upwelling area and the oligotrophic open ocean, where the nutrient concentrations remain fairly stable among seasons. At the western transect, the middle position is considered to be the representative point since all nutrients profiles are markedly homogeneous along this transect and, in addition, nutrient concentrations are rather constant from fall to spring (middle column in Fig.6).