

[General Comments]

This manuscript was improved well because the aspects of temporal variations like Figure 2d were added and the effect of the vertical nitrate flux to the primary production was reasonable when compared with the previous data. These additional discussions were made this manuscript strong. However, several parts did not respect the elementary rules of a scientific writing. I cannot accept this manuscript.

At the abstract, the conclusion was introduced from the pigment analysis and so the result of pigment analysis is important, however, the methods and results of pigment analysis were not described in the text. The authors described “diatom-rich” and “pico-plankton” dominant. How they concluded them? By the pigment analysis, the size of the phytoplankton cannot be clear.

The authors described that the station B is the representative station near the Dongsha. However, this station was the edge eddies, and the physical properties must vary at meso and/or submeso-scale. The authors pointed that the eddies are usually formed in this area, but the nutrient flux must vary in the cyclonic and anticyclonic eddies and/or the edge of the eddies. Such a discussion was not seen in the text. Therefore, I recognized that the description “the elevated nutrient flux near the Dongsha Island...” is over-discussion.

In the Materials and methods, Li and Hansell 2008 DSRII was referred as the nutrient analysis method, however, in that paper, the high sensitive analysis methods using the 2-m long cells are described, but the “standard” methods are not described. In usual, an AA3 analyzer are equipped ~10 cm cell. I cannot understand that the nutrient concentration was measured by long cells with dilution or by short cells. These were concerned with the accuracy; the authors did not show the detection limits but described as “Measurement errors of nutrients at depths during the field study could be negligible as the concentrations are considerably higher than the detection limits of the analytical methods”.

Also in the M&M, the definition of the euphotic layer and/or type of the optical sensor was not described. The authors replied “the PAR is measured during the cruises”, but I cannot see the information of them at this section.

The regression line of Figure 7 was the other problem. The authors relied that “regression line is automatically generated by excel, we need to remove the line between 0-0.25, as it won't have any impacts on our results.” At first, the range of the regression line can be changed in excel, and so this response was unacceptable. And then, is there no impact? The authors did not describe that the dilution series of 0% is not prepared at station B in the text, while it was described in the response. The readers cannot judge that the dilution of 0% was prepared or not because of the inconsistent with the text and figures.

L448 “The integrated phytoplankton chlorophyll-a biomass during the transect study showed a positive correlation with upward nitrate flux ($r^2=0.35$) when station C9 was not included (Table 1), supporting the important role of bottom-up control on phytoplankton production in our study area (Chen 2005).” The authors responded the r value is sufficient, however, based on the result of the regression analysis, the p value of the slope is 0.09, which is not significant (in addition, the r^2 value was 0.34 in my calculation based on the data Table 1 by Microsoft excel). Therefore, I cannot agree with this discussion which was very important for the conclusion of this manuscript.

[Specific Comments]

L282 May 14th -16th, 2014

L297 “surface chlorophyll patches ($\sim 0.3 \mu\text{g L}^{-1}$) found between ...” At first, the patch means patchy increase? Then the surface chlorophyll a concentration $\sim 0.3 \mu\text{g L}^{-1}$ was observed at C11, however, at the other stations, the concentration seems to be $< 0.2 \mu\text{g L}^{-1}$. What does this sentence mean?

L308 “The observed uplift of isopycnals as well as the depths of chlorophyll maximum and nutricline at the shelf station C6 and the offshore station C12” As I pointed in the previous review, the subsurface chlorophyll maximum at C8, C9, C10 seemed to be the same depth with C6. Why these stations were ignored?

L311 “there were substantially higher nutrient concentrations and nutrient gradients at depths of ~ 200 m ... for both stations C9 and C11 in the offshore regions” The silicate and phosphate concentration was actually elevated, but the nitrate concentration at C11 was the same level with C10. Please describe accurately, and why the nitrate concentration was not elevated at C10?

L317 “as horizontal nutrient gradients within euphotic zone are considerably lower than the vertical gradient.” The horizontal advection of eutrophic water cannot be discussed by the only horizontal gradient. The current velocity is also important factor of the horizontal flux. Thus, this discussion is incorporate.

Figure 2c the unit was wrong.

Figure 6 As I pointed in the previous review, the presentation of the gradient of nutrient concentration was not correct. Authors replied that “Nutrient gradients are calculated from nutrient concentrations. They should have the same depths.” Then, for example, the gradient at 100 m depth indicated from where to where? From 75m to 100 m or from 100 m to 150 m? The nutrient gradient is the depth-average values, isn't it? The averaged depth was really 100 m depth?

Figure 7b The label of the Y-axis was wrong.