

## ***Interactive comment on “Spatial and temporal variability in nutrients and carbon uptake during 2004 and 2005 in the eastern equatorial Pacific Ocean” by A. P. Palacz and F. Chai***

**Anonymous Referee #2**

Received and published: 5 June 2012

General Comments: The goal of the paper as stated in the Objectives is “to examine pattern of spatial and temporal variability in the biological uptake” and to “evaluate the role of biological and physical interactions controlling these processes over seasonal and intra-seasonal time scales”. While pattern of biological uptake is well presented, the physical mechanisms to explain biological signals are not sufficiently explained. The authors may consider adding SST to Figures 3 and 6 and providing more detailed explanation on physical environment during 2004 and 2005 and physical mechanisms responsible for variability of PP and nutrient uptake.

Authors assume that the reader is familiar with other work at the Equatorial Biocom-

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plexity cruises. It would be beneficial to add a map of the study region and location of the cruise stations.

The information in tables 2-4 is difficult to connect. The authors may combine this information into one table.

2) Detailed comments:

Page 709, line 1: Please list hydrographic conditions.

Page 712: Please add references on Redfield ratio.

Page 716, line 19: Please explain why PP oscillated strongly on intraseasonal time scales and how is this related to changes in physical environment.

Page 718, lines 23-27: Please add reference McClain et al. (2002), Satellite ocean color observations of the tropical Pacific Ocean, Deep Sea Res., Part II, 49, 2533–2560.

Figure 2: Use of symbols is confusing. Please use the same symbol for one parameter with filled/open option indicating 2004 vs. 2005 (e.g. PP 2004 – filled circles, PP 2005 – empty circles)

Figure 3: I suggest adding SST.

Figure 4: The use of line styles and colors on the figure is not consistent with the text in the Figure caption.

Figure 5: Please change longitude labels to 1400W, 1350E and define the time interval in caption, i.e “end of the along equatorial transect during EB04” – what date is that?

Figure 6: NO<sub>3</sub> uptake vs. NO<sub>3</sub>– please be consistent with terminology. Authors may add time-longitude diagram of SST to this figure. Please change longitude label format to 1400W. . .

Figure 7: Adjust the color scale, the figure is too dark. Please change longitude label

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format to 1400W. . .

Figure 8: Please change longitude labels to 1400W. . .

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