

## ***Interactive comment on “Seasonal and interannual variability of water column properties along the Rottneest continental shelf, south-west Australia” by Miaoju Chen et al.***

### **Anonymous Referee #2**

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Abstract Sentences 2 and 3 needs integration. They can be mix together integrating the information to report. Introduction Line 2. I would prefer to start the sentence like. “Among phytoplankton pigments, chlorophyll. ....” There are other pigments in phytoplankton. I think that the is chlorophyll a that was used as indicator of phytoplankton biomass or you use the total amount of chlorophyll? Depending of your answer change the sentence accordingly. On paragraph 25 and 30, the sentence starting by “It is major is a mechanism. . .” I think this is a typing error remove the second “is” and “a”. Page 5 paragraph 10. Please remove “highly” from the sentence Thus the RCA is a highly nutrient”. . . Page 5 paragraph 20. “. . .are not weather limited.” The gliders were able to fly even during bad weather conditions and strong winds? If so why you mentioned that

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in some seasons data were not present and the graphs have gaps? Methods Page 6. Paragraph 10. Of course, this methodology is a huge advance that regular measurements performed but I was also wondering if two or three days took to complete the transect was not too much time. In very dynamic areas, like upwelling areas, you might have complete different conditions within the 3 days for adjacent areas. Page 6 paragraph 20. Did you performed any intercalibration exercise between the data collected from the chlorophyll fluorescence recorded and the quantification of chlorophyll (mg/m<sup>3</sup>). Again total chlorophyll or chlorophyll a only. Page 6. Last paragraph is very confusing. I don't understand if you reach the conclusion that the data was anormal by subtracting to the seasonal mean. You say previously that you perform quality control on data. Why you don't exclude the anormal data there. . .so you won't have to deal with them again later. I think that you should try to rephrase and clarify that paragraph. Results Page 8. 3.3 Methods section; first line. This information must be in Methods section and justified why there are no mean for the season for that months, if you claim that gathering of data using gliders are not weather limited. Page 9 Paragraph 25 Typing error. Replace 6a by 7a. Pag 10. The 3.5 section of results were very difficult to follow because the figure 9 were not understandable and I advise rebuilding it in clearer manner. Probably because I was confused with the figure I think that the paragraph 20 description was not correct. You have a higher chlorophyll concentration than 0.81 mg/m<sup>3</sup> mentioned for 2009, between 10 and 20 m depth with chlorophyll concentration ranging 1.8mg/m<sup>3</sup>. Figure 10 was very good evidencing the different pattern between El Niño e La Niña. Discussion Page 12. Line 14 (I think) Typing error : repeated. Paragraph 20 to 25 must be in introduction. Paragraph 35 to 40 was already described in introduction. Paragraph 25 and 35 must integrated with the obtained data by proving examples of the physical processes I think that your discussion must be improved by comparing your data with another data from upwelling coastal areas also impacted by El Niño and La Niña and compared the impact results in terms of chlorophyll and consequently in productivity between areas or with former events. It is very important to bring awareness of climate change and the huge effects they have in coastal dynamics

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and phytoplankton biomass and overall productivity giving relevant to studies like the ones you developed.

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