

## ***Interactive comment on “Observed small spatial scale and seasonal variability of the CO<sub>2</sub>-system in the Southern Ocean” by L. Resplandy et al.***

**L. Resplandy et al.**

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Dear Editor and Reviewers, We addressed all reviewers' comments. In particular, we clarified the limitations and biases associated with our analysis:

- the use of fluorescence that is only a qualitative indicator of biological production
- the sampling bias of frontal areas by lagrangian drifters
- the Lee-based approach to compute alkalinity that underestimates the DIC uptake associated with the formation of calcite.

We also added a figure to address a point raised by reviewer 1 concerning the seasonality of the dominant processes.

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Finally, we modified and enhanced most figures so the main features are clearer.

We hope the manuscript is now acceptable for publication in Biogeosciences. Please refer to the supplement pdf file provided below for the detailed response.

Please also note the supplement to this comment:

<http://www.biogeosciences-discuss.net/10/C6539/2013/bgd-10-C6539-2013-supplement.pdf>

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Interactive comment on Biogeosciences Discuss., 10, 13855, 2013.

**BGD**

10, C6539–C6540, 2013

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