

Interactive comment on “Trophic state of sediments from two deep continental margins off Iberia: a biomimetic approach” by A. Dell’Anno et al.

Anonymous Referee #2

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General remarks:

The manuscript presents important and relevant investigations from two benthic systems on the Iberian coast. However, if the authors try to spice up their investigations of these deep-sea ecosystems by the usage of a ‘sexy’ title with terms like > trophic state < or > biomimetic <, I would at least expect that somewhere in the text both very different slope-systems would be generally classified and compared due to their trophic state (eg. oligotrophic vs. eutrophic).

It is my true opinion, that suchlike conceptual terms may confuse rather than assist the reader, and I do not think, that this is the purpose of the authors. Because the title im-

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plies that here two slope systems (including their canyons) are compared, I would generally expect that differences between both continental margins are contrasted more precisely.

However, in general the methods for the investigations described here, are up to date and it is a good approach to investigate suchlike systems on different spatial and temporal scales. Nonetheless I wonder if authors could also present data of primary productivity of the investigated areas, which might be measured directly in the euphotic zone eg. by CTD. If suchlike investigations in the water column were not carried out, it would be good to compare and correlate the results for sediment parameters at least with satellite data (eg. SEAWIFS) - which should be freely available. A general remark for the figures: it would be much easier to compare parameters - eg. between both slope systems - if authors would use standardized ranges on the ordinate.

Comments in detail:

p.17623, l.22-23) Authors describe dense water cascading in the canyon. Is there any evidence (eg. measurements by moorings) that suchlike cascading also occurred during the period of investigations?

p.17624, l.18) avoid self citation. Better use citation of one of the first authors mentioning this parameter (eg. Thiel 1978).

p.17652, l.4) >selected< instead of >select<

p.17628, l.4) CPE in total (total phytopigment) only has limited usability as a parameter for really fresh input of primary organic matter. While chl a has half-life rates of ~14d (Sun et al. 1991), phaeopigments half-life rate is in an order of 40d (Furlong & Carpenter 1988). Thus, pure chl a seems to be a better parameter for fresh phytodetritus input.

p.17632, l.6-8) Here it would be nice if authors would compare their results with measurements for primary production in the euphotic zone either from CTD casts or from

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satellites.

p.17633, l.13) I'm not sure if >vehicle< is the right term in this case. I would use >source<.

p.17643, l.11-12) for me it is unclear how the mentioned mechanisms affect the discussed results. Authors should describe the mentioned mechanisms first and then how they might interact with the presented results.

p.17643, l.13) processes >are< able

p.17643, l.20-22) if authors discuss significances, they should mention calculated p-values.

p.17643, l26-p.17644, l.3) In this part of the discussion a interesting theory is described. However authors' conclusions remain a bit nebulous. This passage would become easier to understand if authors describe how the foraging theory leads to the mentioned important clues in more detail. They should also describe which clues are essentially meant here.

Interactive comment on Biogeosciences Discuss., 9, 17619, 2012.