

Interactive comment on “Global marine plankton functional type biomass distributions: *Phaeocystis* sp.” by M. Vogt et al.

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Response to interactive comment on “Global marine plankton functional type biomass distributions: *Phaeocystis* sp.” by X. Wang

We thank X. Wang for his very positive and constructive comments to our manuscript. All suggestions of this reviewer have been included in the final revised version of our manuscript. Below please find our reply to the specific comments of our reviewer:

Specific comments:

XW: 1. The abstract adequately summarize the whole ms. The abstract is easily understood even without reading the entire manuscript. But I don't think the conference “Menden- Deuer and Lessard, 2000” should to be listed in the abstract section.

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MV et al.: According to the reviewer's suggestion, the reference has been removed from the abstract.

XW: 2. The Introduction The Introduction clearly explains why the authors perform the study and write a manuscript. It's very good. In line 6, page 409, suggest inserting (Medlin et al. 1994 and/or Medlin and Zingone 2007) after colonies.

MV et al.: The respective reference has been inserted.

XW 4. Results The results are clear, the analysis of the data are well executed. In line 25, Page 415, one of “winter” should be deleted. Here is my question: In the table 2, I note the colony diameter of *P. globosa* ranged from 10-30,000 μm . To my knowledge, the giant colonies were only observed along the coast of East Asian (eg. China, Vietnam), but in the figure 2, 5, 7 and 9 why I can't observe the distributions of giant *P. globosa* in Asian ocean?

MV et al.: The colony size range has been taken from Schoemann et al. 2005, so it doesn't refer only to the observations that have been included in the database. It is based on all reported colony sizes reported in the literature at that point in time. Since we use a standard colony size of 200 μm , this number wasn't used to determine total biomass including mucus and mucus carbon in our manuscript. However, the maximum colony sizes are affecting our calculations for maximal total carbon including mucus, which are included in our Excel spreadsheet. In order to clarify this, we now change the wording on pages 9 and 10/39 (former pages 413-414) to:

“ Maximum sizes are reported in Schoemann (2005) and Baumann (1994), and range between 9 mm - 3 cm for *P. globosa*, between 1.5-2 mm for *P. pouchetii*, and around 1.4-9 mm for *P. antarctica*. Given the lack of data on colony sizes, we are unable to quantify the impact of large colonies on average carbon biomass. However, huge colony sizes are likely to be geographically restricted to specific regions. We assess the uncertainty of our estimates by calculating mucus carbon for the minimum and maximum colony sizes reported for each species (Schoemann2005, Baumann1994).

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Estimates of minimal and maximal total carbon are included in our data base, but only mean total carbon including mucus will be discussed below. “

Interactive comment on Earth Syst. Sci. Data Discuss., 5, 405, 2012.

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