Biogeosciences Discuss.,
doi:10.5194/bg-2016-139-RC1, 2016

Biogeosciences Discussions

Interactive comment on "Environmental drivers of coccolithophore abundance and calcification across Drake Passage (Southern Ocean)" *by* Anastasia Charalampopoulou et al.

Anonymous Referee #1

Received and published: 10 May 2016

This paper is well written and presents new data on coccolithophore distribution and calcite production in the Drake Passage. There is also a lot of accompanying physical and chemical data that are not usually taken on such cruises. Although conclusions are not definitive they will contribute to the ongoing discussion of the role of coccolithophores in the anthropocene.

Line 13 Although coccolithophore diversity or abundance?

Line 19 Although CP represents less than 1% of total carbon fixations How does this compare to what has been written about the Great Calcite Belt? How does the unique doubling time of coccolithophores influence the equation?

Line 71 Length of (what) exposure.

Line 113 Sampling What is the importance of the temporal timing of the sampling? Would it make a difference? Jan or March?

Line 117 samples were collected from the upper 100m of the water column Is it possible to get the depths of the samples? Later line 139 "5 CTD depths over the upper 100 m". Also in Figure 4: line 949 Abundance of Major coccolithophore species Which depths?. . .Not clearly stated the difference between Fig 5 surface distribution of coccolithophores and Fig 4.

Line 136 as well as the criteria of Orsi et al What criteria?

Line 320 How do the coccolithophores assemblages found in the Drake Passage compare to other publications of coccolithophores in the southern ocean?

Line 322 Drake Passage: including???? "Including" is not a clear word.

Line 430 A previous study across the Drake Passage When was this study undertaken?

Line 497 Winer et al Winter et al

Line 528 coccolithophoroes contributed only a small fraction What were the main contributors

Interactive comment on Biogeosciences Discuss., doi:10.5194/bg-2016-139, 2016.