**Interactive comment on** “Effects of increased atmospheric CO$_2$ on small and intermediate sized osmotrophs during a nutrient induced phytoplankton bloom” by A. I. Paulino et al.

**Anonymous Referee #3**

Received and published: 17 December 2007

This is manuscript that describes population dynamics for osmotrophs (phytoplankton and bacteria) at the level of resolution given by the flow cytometer during the PEECE III experiment. It is thus complementary to other the paper by Egge et al. describing phytoplankton at the coarser level of primary production and chlorophyll in size fractions.

The contribution is important since, without this, one could always argue that similarities in chlorophyll levels may hide large differences and fluctuations within the phytoplankton communities of the different treatments. In this context is nice to note that the authors are aware of the fundamental differences between the groups they iden-
tify in the flowcytometer: Some of them may be close to species level (E.hux and maybe Synechococcus), while some are subcommunities containing unknown number of species (e.g. heterotrophic bacteria’). Not all discussions of such data seem to realize the important difference.

I found some minor language problems & typos: p. 4176 l.6: fist should be first p.4178 l.12: Comment: personally I like a consistent use of ‘abundance’ rather than ‘numbers’. ‘Numbers’, (and even worse ‘density’) are more ambiguous terms when used for ‘abundance’. p.4179 l.15 ‘towards’ instead of ‘of’ ?? p4181 l.14: probably ‘remained’ instead of ‘retained’, but maybe slight reformulation required? P4182 l.10: .... suggests ‘that’ viruses .... P4182 l.24: comma after ‘mesocosms’ (?) p.4183 l.6: delete ‘s’ in ‘picoeukaryotes’ (?)

Interactive comment on Biogeosciences Discuss., 4, 4173, 2007.