

Interactive comment on “Coccolithophore responses to environmental variability in the South China Sea: species composition and calcite content” by X. B. Jin et al.

Anonymous Referee #1

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This manuscript shows composition of coccolithophores and contribution of each coccolithophore species/taxa to the calcite suspension in the water column in the South China Sea. Results from this study are useful for understanding of coccolithophore flora in the marginal sea. I would recommend publish this manuscript from the Biogeosciences after major revision. My comments are as follows;

Page 4 Line 1; ‘Gladiolithus, Calciosolenia and Algirosphaera’ are coccolithophore genus not coccolith species.

Page 6 Line 4, Page 8 Line 34, Page 8 Line 40; Three taxa not three species, since ‘Gephyrocapsa spp.’ includes multiple species.

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Page 6 Line 6. and Figure 7; Authors mixed the coccoliths of *Gephyrocapsa ericsonii* and of *Gephyrocapsa oceanica* into a same category, *Gephyrocapsa* spp. in the estimation of calcite content, despite the volume/size of coccoliths of *G. ericsonii* is significantly smaller than that of *G. oceanica*. I would recommend authors to separate these two species from each other in the estimation of calcite content, revise Figure 7 with new estimation, and make discussion based on the new estimation.

Page 6 Lines 32-33; “The coccolithophore assemblages of the SCS are similar with those in the equatorial Pacific Ocean (Hagino et al., 2000).” Hagino et al. (2000) reported variation in coccolithophore assemblages in the equatorial Pacific. Which of the Hagino’s assemblages resembles to the assemblage observed in this study?

Page 6 Lines 35-37; “However, in the equatorial and subtropical gyres of the Pacific and Atlantic Ocean, these coccolithophore species are found much deeper (150 m to 250 m) in the water column (Hagino et al., 2000; Boeckel and Baumann, 2008; Beaufort et al., 2008).” Hagino et al. (2000) studied coccolithophore assemblages in the equatorial upwelling front and in the Western Pacific Warm Pool, not in the gyre. By the way, what is the ‘equatorial gyre’?

Page 7 Line 1; “Group 1 included umbelliform species, such as *U. irregularis*, which are considered K-selected (specialists) species” Please cite some papers that mentioned *U. irregularis* as K-selected species.

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