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Interactive comment on "Biogeochemical characteristics of suspended particulates at deep chlorophyll maximum layers in the East China Sea" *by* Qianqian Liu et al.

Anonymous Referee #3

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Review note

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General Comment: This manuscript characterized the bulk and isotopic composition of organic matter collected in DCM layer of the south East China Sea in summer time. The study is well designed and neatly presented. It observed the marine derived material is the dominant organic matter in DCM layer. The influence of the Yangtze River is very limited. Additionally, the nitrogen isotopes elucidated the potential role of N2 fixing in middle shelf where TWCW is dominated and remineralized nutrients plays an important role. However, in this point, the depth profile will be very helpful to strengthen

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Discussion paper

the discussion but it is lack in the manuscript. Furthermore, the influence of lateral transport (cross shelf) better to be considered when the authors estimate the nutrients contributions from different sources and POC inventory.

Specific comment: 1) The title better be more specific in study region, such as southern East China Sea 2) Abstract: OK 3) Introduction: Better to emphasize the status of DCM in ECS and the potential role in POC inventory estimation and hypothesis 4) Method-sïijŽP5, the filtration volume was in the range of 0.5-2L, the author used half filter for POC or PN analysis, Did they have enough material for reliable analysis, especially for nitrogen? 5) Result and interpretations: The order of hydrographic characteristics can be adjusted as salinity, turbidity and chla 6) Discussion: In general, the authors gave proper credit to related work and clearly indicate their own new contribution to the biogeochemical cycles in the study area. Some minor suggestions: a. P13-14, How to use C/P ratio to estimate the Yangtze-sourced nutrients for marine primary productivity, how does the lateral cross shelf transport contribute to the POC inventory? b. P15, L20, this paragraph is a bit speculative and need more straightforward data to support itself, the depth profile data could be bit helpful to elucidate. c. Comments on 5.5, why the Yangtze River will play an important role in DCM OM in south ECS, the paragraph of TGD can be moved which seems less related to this topic, also I am confused about how the author summarized in the abstract" SPM investigated here seems not to be influenced by the terrestrial organic matter supplied by the Yangtze River (Changjiang) in summer 2013, a finding that is contrary to a number of previous studies' conclusion.", which is not convinced in this part. d. The quality of Figure 4 and 5 should be improved. Figure 8b, there is 35 samples summarized but all the other plotted based on 36 samples, why?

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