

The spectral-based model proposed by Wang et al. (2014) was modified in this study for retrieving PSC in the East China Sea from MODIS data. Internal relationship between PSC and the spectral variability of phytoplankton absorption is the key point for this model. In order to minimize the effect of high noise and low accuracy at shore wavelengths, the authors reconstructed the Rrs spectra by using the multivariate linear relationships at different wavelengths. Based on in situ match-up data analyses, satellite derived PSC compared well with those derived from HPLC pigment composition. Seasonal variability of PSC in the three sub-regions were discussed by considering different environmental factors, which gave us a better understanding of PSC distribution in ECS at synoptic scales. We can see obvious improvement in the revised manuscript.

I suggest minor revision considering the following points:

1. Detailed information for estimating PSC from the DPA approach are required. In this study, Chlorophyll-b was one of the diagnostic pigments of nano-phytoplankton, which is different from that method used by Brewin et al. (2010) for open ocean. More explanations are needed.
2. It's not surprising to see the poor performance of the model by Brewin et al. (2015) or Sun et al. (2017). There are several points we have to consider. Different criteria for estimating the PSC from the diagnostic pigments were used which may result in large differences in the basic dataset. We also have to consider the regional differences. Did the authors use the model directly? Maybe the coefficients for these models could be locally modified before comparison.
3. General spatial distribution of PSCs seems reasonable. Obvious differences about the seasonal variability of PSCs in three sub-regions were shown in Fig.8 and Fig.9. We can see clear shift of the dominant phytoplankton size class, especially in MSR and KR regions. More explanations about these variabilities with referred to previous work (two of them are listed below) could be very helpful for confirming these results. I think these results could also be highlighted in the abstract.
4. The exact size and location of three sub-regions could be specified by giving the longitude and latitude range, rather than the pixel numbers.

Some references:

Guo, S.J., Y.Y. Feng, L. Wang, M.H. Dai, Z.L. Liu, Y. Bai, and J. Sun, 2014. Seasonal variation in the phytoplankton community of a continental-shelf sea: the East China Sea. *Marine Ecology Progress Series*, 516 103-126

Liu, X., Xiao, W., Landry, M.R. et al. , 2016. Responses of Phytoplankton Communities to Environmental Variability in the East China Sea. *Ecosystems* , 19: 832-849.  
<https://doi.org/10.1007/s10021-016-9970-5>.