Biogeosciences Discuss., 7, C4647–C4654, 2011, "MODIS observed phytoplankton dynamics in the Taiwan Strait: an absorption-based analysis".

By S. Shang et al.

We deeply appreciate the reviewers' time and effort to help improve the manuscript. We have revised the manuscript accordingly. Below are our replies to the detailed and constructive comments/suggestions.

Anonymous Referee #2

General comments

QAA technique for the IOP extraction from R_{rs}, developed by Lee et al. (2002) , was applied to MODIS satellite data to derive phytoplankton absorption coefficient(Aph) in the Taiwan Strait. And the obtained Aph by satellite value were compared with in-situ values measured by filter technique for the validation of Aph/QAA. Finally, Aph was used to monitor phytoplankton dynamics in the waters. So this paper shows us following scientific achievement;

Significance

1. The authors showed us the validation QAA technique from satellite Rrs data. This kind of practical research applied to satellite data is not easy and enough to find-out. There was quite good relationship between satellite extracted & in-situ measured values.
2. To monitor ocean ecology, general techniques are used to chlorophyll values as an indicator of primary biomass. But, the author applied here Aph values in place of <chl>. This is can be considered as new approach even though <chl> is directly related to Aph.
3. The authors, at last, applied to identify for the Taiwan Strait water properties in view of ecology, 3 distinct features of phytoplankton dynamics are identified.

Reply: Thanks!

Suggestions

Page 7796, Please correct/unify the expression of Aph & aph

Reply: a_{ph} indicates the absorption coefficient of phytoplankton, and is wavelength dependent. *Aph* refers specifically to the a_{ph} at 443 nm, which we used as an alternative index of pigmentation.

Page 7799, line 9: "Where ρ is the reflectance of spectralon plaque (50%) and F is .....". Please correct as "Where ρ is the reflectance (0.5) of spectralon plaque having Lambertian characteristic in all measurement wavelength".
Page 7799, line 20: "Particulate absorption was measured with ..." Please correct as: "Particulate absorption was measured by filter technique (Kiefer and SooHo, 1978 ?) with ..."
Page 7800, line 7-8: "in situ" => "*in-situ*"
Page 7800, line 16: "we used the root mean square in log scale (RMSE), ..." Please

correct as: "we used the root mean square error in log scale (RMSE)...."

Reply: The above items have been corrected. Thank you.

Recommendation

Please describe/discuss in some place; what is the difference / advantage - disadvantage if we use Aph or <chl> to monitor phytoplankton dynamics.

Reply: We have added a few sentences in the conclusion section to discuss the advantage/disadvantage if using *Aph* or Chl to monitor phytoplankton dynamics.