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***Interactive comment on* “Variation of phytoplankton absorption coefficients in the northern South China Sea during spring and autumn” by J. Wu et al.**

J. Wu et al.

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As pointed out in the paper and in our earlier reply, we agree that data available for analysis are limited (because of limited resource for field measurements). What we are trying to present, however, is that even with such limited data measured in the South China Sea, measured optical properties (phytoplankton absorption coefficient, in particular) clearly reveal changes of phytoplankton communities. Especially, we are trying to emphasize the impact of environmental forces on phytoplankton community, which is very important for modeling and prediction of an ecosystem. It would certainly make our argument and generalization stronger had we have more pigment concentrations from HPLC measurements, as Dr. Boss (Editor) indicated. Unfortunately that is not possible during this study because concurrent pigment measurements conducted

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by a different research group were much less (only five samples). We therefore have to rely on literature and similar studies of the community to draw a general picture of changes of phytoplankton communities in the South China Sea, and found such a picture is in agreement with phytoplankton physiology. Further, these analyses do imply/support the importance and usefulness of phytoplankton absorption as an ecological parameter and an input parameter for primary production, which is consistent with earlier conclusions of Perry et al (1994) and Marra et al (2007). Phytoplankton absorption is also an important product from ocean color remote sensing. In the MODIS algorithm (Carder et al, 1999), its spectral shape plays a role in the derivation of its magnitude. Carder et al (1999) suggested use SST to select the shape parameters for global oceans. Based on our measured phytoplankton absorption, we were trying to indicate that those global parameters have limitations when applied to waters of South China Sea, and we are in the process of designing regional scheme to optimize the selection of the shape parameters, but that is out of the scope of this study (interactions between environmental forces and phytoplankton communities).

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