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Ocean Science Discussions

Interactive comment on "Biological data assimilation for parameter estimation of a phytoplankton functional type model for the western North Pacific" *by* Yasuhiro Hoshiba et al.

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First of all, we should disclose our mistake of drawing Figure 3 in our manuscript (MS).

Referee #1's comment gave us the chance of finding our mistake: As the first step of simulation procedure, using 1-D ecosystem model, we obtained an optimized parameter set for our ecosystem model. It takes 8 model years for a simulated ecosystem to approach an equilibrium state from an initial condition. Our mistake was that Figure 3 was drawn using monthly climatology over the 8 years, although we should have used monthly data only in the last simulated year.

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The serious problem was that we described our results in section 3.1 based on the wrong Figure 3 mentioned above, without noticing the error previously. As correctly pointed out by Referees #1 and #2, the optimized case was clearly worse than the default case. Please find the next page that includes the wrong and correct Figure 3. In the correct figure, simulated data in the optimized case (dashed lines) is clearly closer to Satellite data (solid lines) than that in default case (dotted lines).

We made sure that we did use the optimized parameter set obtained for the CORRECT Figure 3 in the submitted manuscript in spite of the wrong Figure 3 in it. Therefore we had NOT found any problem in the following steps of simulation using 3-D model (hence, the rest of manuscript).

We must sincerely apologize to two referees, the topic editor and the people who are interested in this study for your time to read our MS with the wrong Figure 3. We are now rewriting our MS and preparing replies to the referees' comments.

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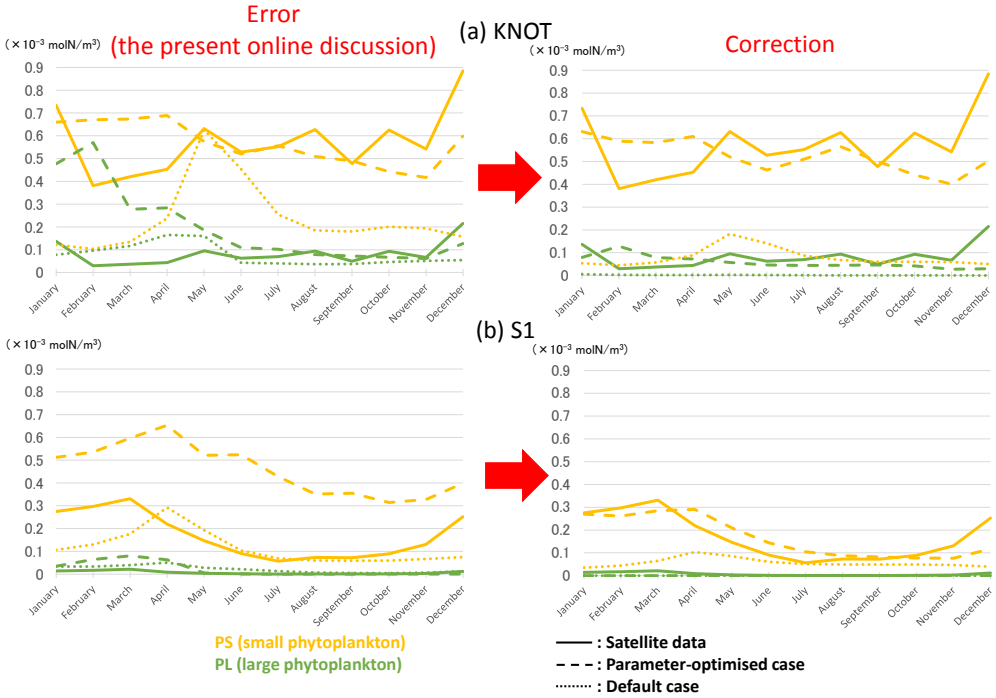

Figure 3. Seasonal variations of surface phytoplankton biomass in the 1D NSI-MEM and satellite data at (a) St. KNOT and (b) St. S1 are shown as typical observational points of the subarctic and the subtropical regions, respectively.

Fig. 1.

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