Review : Decadal and spatially complete global surface chlorophyll-a data record from satellite and BGC-Argo observations.

This is my second round of review of this manuscript. I would like to commend the authors for their very thorough responses and for the care taken in addressing the reviewers' comments.

Significant (and I am sure time-consuming) changes were made in this version, including applying a slope factor to BGC measurements of Chlorophyll from Fluorescence. I would suggest showcasing the OC-CCI–Argo matchup statistics using the corrected Argo data in Figure S1.

The integration of chlorophyll to the first optical depth is also appreciated and strengthens the analysis.

The new Figure 1 is excellent and is very helpful to the reader.

Minor comments(at the author's discretion):

Figure 4: It is still quite hard to visualize the time series. I would suggest using a lighter shade of gray for the uncertainties.

Figure 5: Similar comment, the time series are hard to see.

Line 306 "Although, the precision is larger as highlighted by the RMSD values ~0.6 log10(mg m-3) compared to ~0.4 log10(mg m-3) for the comparison to the BGC-Argo chl-a (Supplementary Figure S1 d)." I am not sure I understand this sentence. Did you mean the error is larger?

Figure 5 and Line 420 "For example, Gregor and Gruber (2021) set a fixed value of 0.3 mg m-3 (blue dashed line in Figure 5). Here, the results show that the use of fixed values for wintertime chl-a concentrations overlooks the regional variability in wintertime chl-a and can in some cases lead to an elevated chl-a concentration above that of the spring bloom during wintertime (Figure 5e, f)" . I do not see it in Figure 5.f., but in 5.b.

Could you expand on whether this difference is due to your under-ice fixed value of 0.1 mg m-3, or to the kriging?