

The authors combined and processed data from different long-term satellite data-sets, along with high resolution bathymetry, to estimate PAR, K_{PAR} and PAR_B in six fjords in the Arctic Ocean. The aim of this work is interesting as these data can support investigations about climate changes in the region. Nevertheless, the satellite-derived data-set is strongly related with the environmental characteristics of the water column, but any in situ observation is available to assess the quality and reliability of their results. The use of minimum light requirement is a very poor and qualitative indication. The added value and the effort they did is also in the geographical selection to obtain the data for each of the fjords, characterized by a complex topography, but this is not properly described. The data-set can be better documented and even the methods and the statistics applied is questionable. That's why I suggest a major revision of the paper.

Specific comments

- Maps of the fjords reporting horizontal scale, bathymetry and position of pixels can be added to Fig.1. You could also indicate here how many pixels were available and the surface of shallow and coastal surface (which is only reported at the end of the paper)
- Despite some information are spread in the text, a table should resume detailed information about the data / sensors used, along with period covered, temporal and spatial coverage.
- Even you mention that only pixel with a minimum of 20 values each month were considered, you should provide some statistics about the temporal distribution of good / discarded data at least for each year and each fjord.
- In Fig.2 use different colours to indicate each fjord: C D and E F can be hardly distinguished in the reported plots.
- The resolution of the computed data-set is at 50 m but satellite data are at 1 km. This may result into misleading interpretation for other users and should be clearly indicated in the text, along with the method used for interpolation.
- Reported climatological averages need the standard deviations, otherwise some results are meaningful
- Can you explain why median better describe the seasonal cycle?
- I would avoid estimation of long trend as the derived data-set are semi-qualitative and values are strongly dependent of the ice formation/ melting cycle. On the contrary you could better relate and discuss the observed interannual variability in terms of sea-ice, cloud coverage and river runoff, but this might lie outside the scope of this Journal