Earth Syst. Sci. Data Discuss., referee comment RC1
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Comment on essd-2021-351

Anonymous Referee #1

Referee comment on "Primary productivity measurements in the Ross Sea, Antarctica: a regional synthesis" by Walker O. Smith Jr., Earth Syst. Sci. Data Discuss., https://doi.org/10.5194/essd-2021-351-RC1, 2021

The dataset provided by Dr. Walker Smith, "Primary productivity measurements in the Ross Sea, Antarctica: A regional synthesis", contains thousands of high-quality in situ measurements of chlorophyll and primary productivity in the Ross Sea, Antarctica, for a span of 23 years. Considering the importance of this region and the difficulty to obtain any field data from this remote and challenge area, this dataset is extremely valuable not only for the study of the biogeochemical processes of this region, but also for the development and evaluation of schemes for satellite remote sensing. The description of the dataset is well written. I would wish to see this dataset be quickly published and used by the oceanography and remote sensing community. I have only a few minor comments/suggestions for the author to consider.

1. PAR. It is the relative value (in reference to surface PAR) provided, not the absolute value. Since primary production is sensitive to solar radiation, I would like to see the inclusion of surface PAR value.

2. Units. The units in the dataset for chlorophyll concentration are shown as mg/L, which I think should be mg/m3, otherwise the concentrations are 1000 times lager than common values.

3. Format. The "-3" in "kg m-3" (line 128), the "2" in "R2" (line 215), etc., better be in superscript.