

Interactive comment on “Satellite observations of new phytoplankton blooms in the Maud Rise Polynya, Southern Ocean” by Babula Jena and Anilkumar Narayana Pillai

Anonymous Referee #1

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In this study, the authors present a phytoplankton bloom first known appearance on the Maud Rise polynya in the Southern Ocean. The authors used various remote sensing images from different broadbands (visible, microwaves,...) as well as modelling and in-situ float data to support their approach which is appreciable. The appearance of the bloom is then discussed according to the bio-physical mechanism at its possible origin as well as in the context of the future under warming conditions. Overall, the work is of good scientific quality and the results are significant.

However, I would have liked the authors to go further into their analysis and discussions of the impact of light availability on the bloom. Indeed, it would have been interesting

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to compare the irradiance with known threshold in the literature, for example, in parallel of the SIC evolutions as it can have crucial impacts on the bloom and growth of phytoplankton.

Minor comments :

line 33. replace a largest by the largest

Figure 1a. - There is too much information in figure 1a resulting as difficulties to see or understand what is displayed.

Figure 1. why is the latitude grid different in figure 1a compared to other Figure 1 panels ?

Figure 1b,c,d,e. the authors chose a criteria of chl-a \geq 0.8 (line 69). why display chl-a \geq 1 on the scale instead of 0.8 in these panels ?

Figure 1. Would it be possible to also show the SIC extent ?

Figure 2. same question as Figure 1 on the scale maximum displayed.

Figure 2. Difficulties to distinguish the contours of the bathymetry in 2a and 2b.

Interactive comment on The Cryosphere Discuss., <https://doi.org/10.5194/tc-2019-282>, 2019.

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