

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

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I would like to give some comments on this article which reports evidence of new phytoplankton blooms and its causative physical mechanism. Firstly, I would suggest to make modification ‘unprecedented bloom’ instead of new bloom’. The study demonstrates how the phytoplankton over the shallow bathymetric region of the Southern Ocean would likely respond in the future under a warming climate condition and continued melting of Antarctic sea-ice. The authors did a very good work combining variety of remote sensing satellite sensors, Bio-ARGO and reanalysis products. The authors states that the occurrence of phytoplankton bloom over the shallow regions of Maud

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Rise seamount where the doming of isotherm/isopycnal brings deeper high nutrient water above the seamount where it may be utilised with a conducive environment of light availability. Why the salinity data is analysed in this case? I suggest the authors to look into the salinity data in the ARGO profiles because the melting of sea-ice leads to the development of shallow mixed layer. It is expected to get low salinity values with increased stability of the water column (generate the stability map). It is required to demonstrate the temperature, salinity, mixed layer profiles, and stability map from ARGO depicting extended features. Otherwise, the reported event is a rare event, and likely to be occurred in the future under a warming environment. The readers will learn something new in this manuscript and has worth to report.â€“

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