

Review of “Two different phytoplankton blooming mechanisms over the East China Sea during El-Niño decaying summers” by Lee et al.

Comment on egusphere-2024-3406 | Editor Comment:

Two of the three reviewers (including the first round of review) were concerned with the coarse resolutions of the model used. You responded in detail but failed to include any relevant revisions in the manuscript. As readers may also raise similar concerns in the future, please, in the manuscript, briefly discuss the potential weaknesses of the model and explain why this model meets the requirements of your study.

Response: We are grateful to the editor for your time and support in reviewing our work.

In response to the editor's suggestion, we have added further explanation regarding the limitations of the model resolution, as well as the validity of the model-based results in the manuscript as follows:

(L447-454): In our study, we used a global climate model to investigate how large-scale climate variability influences oceanic biogeochemical processes. The model has a relatively coarse resolution of $1^{\circ} \times 1^{\circ}$ across the global domain, which limits its ability to resolve small-scale eddies and coastal upwelling, potentially leading to an underestimation of SCHL variability. Despite this limitation, the model reasonably captures the observed spatial and temporal patterns of SCHL variability, allowing us to effectively examine the physical mechanisms driving these variations. However, we acknowledge that the quantitative contribution of each physical process could be resolution-dependent. Therefore, future studies using higher-resolution models would be valuable for providing a more precise quantification of these processes.

L112-113: Change “surface chlorophyll-a anomalies (SCHL) to “surface chlorophyll-a (SCHL) anomalies”.

Response: Corrected.

L164: Change “anomalous surface chlorophyll (SCHL) blooms” to “anomalous SCHL

blooms". SCHL has already been defined in L112-113.

Response: Corrected.