

## ***Interactive comment on “Marine biogeochemical cycling and climate-carbon cycle feedback simulated by the NUIST Earth System Model: NESM-2.0.1” by Yifei Dai et al.***

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In this revised version, we have carefully addressed both reviewers' comments and make corresponding changes in the text, figures, and tables. The responses can be found in the supplement. Major revisions include: a) The title is changed to 'Marine biogeochemical cycling and oceanic CO<sub>2</sub> uptake simulated by the NUIST Climate System Model: NUIST-CSM-2.0.1'. b) We diagnosed the pattern of nutrients limitation for phytoplankton. c) We added the figures and discussions of the geographic and latitude-depth distributions of nutrients, alkalinity, and DIC. d) The model description section is rewritten. e) A detailed model comparison of dynamic ocean fields between

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NUIST-CSM-2.0.1 and CMIP5 models during the pre-industrial era and historical period is provided as supplements. Also, the biogeochemical fields during the pre-industrial era are compared with IPSL-CM5A-LR, and the results are provided as supplements. We greatly appreciate your time. We look forward to your feedback soon. Thank you and best regards.

Please also note the supplement to this comment:

<https://www.geosci-model-dev-discuss.net/gmd-2018-68/gmd-2018-68-AC1-supplement.pdf>

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Interactive comment on Geosci. Model Dev. Discuss., <https://doi.org/10.5194/gmd-2018-68>, 2018.

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