

Ocean Sci. Discuss., referee comment RC2 https://doi.org/10.5194/os-2020-125-RC2, 2021 © Author(s) 2021. This work is distributed under the Creative Commons Attribution 4.0 License.

Comment on os-2020-125

Anonymous Referee #2

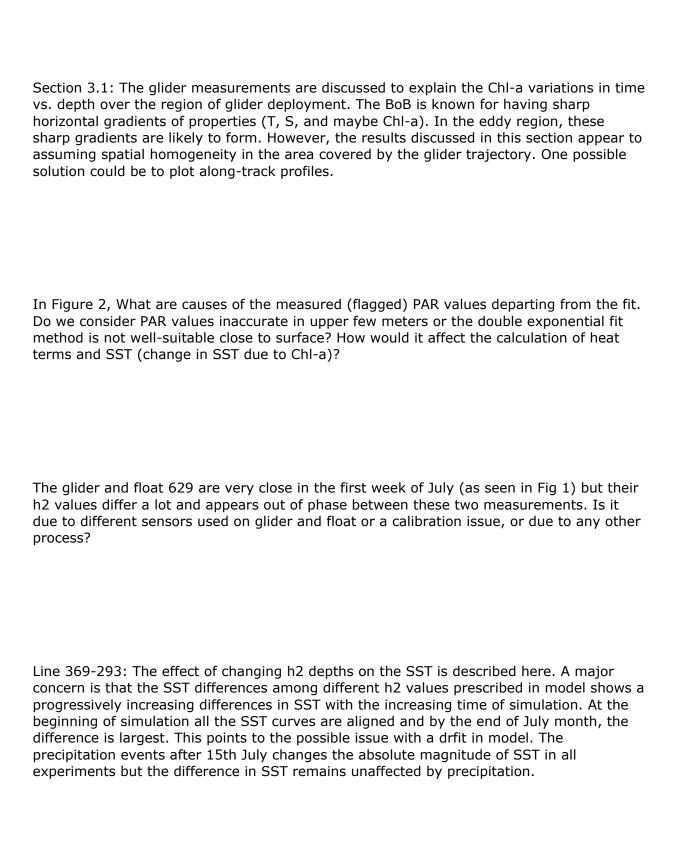
Referee comment on "Spatial and temporal variability of solar penetration depths in the Bay of Bengal and its impact on sea surface temperature (SST) during the summer monsoon" by Jack Giddings et al., Ocean Sci. Discuss., https://doi.org/10.5194/os-2020-125-RC2, 2021

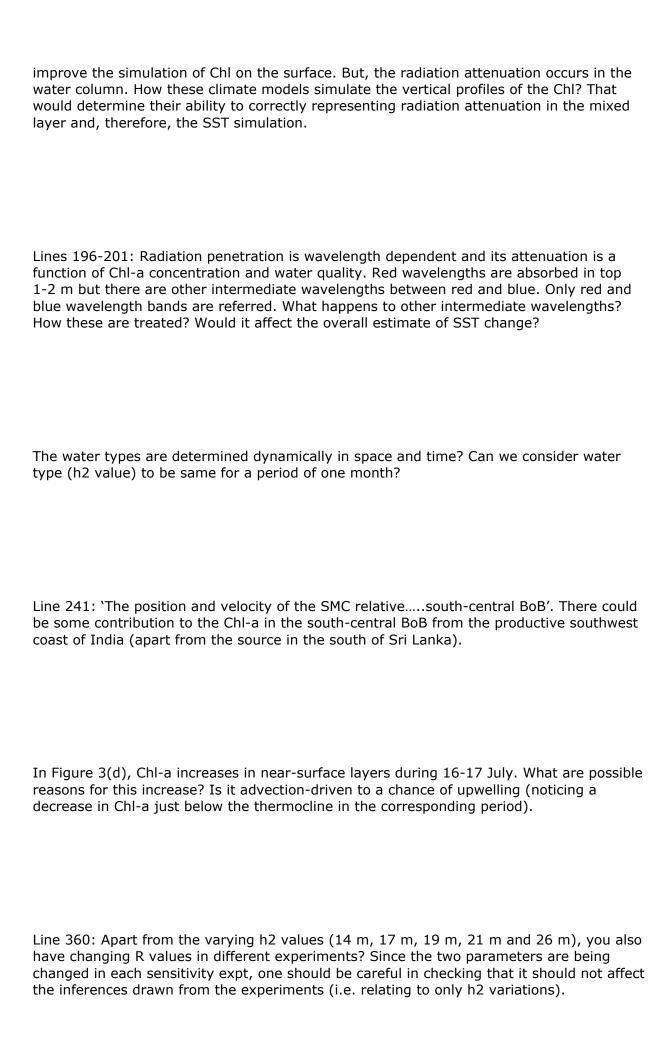
Comments on the manuscript entitled Spatial and temporal variability of solar penetration depths in the Bay of Bengal and its impact on SST during the summer monsoon authored by Jack Giddings et al.

General comments:

The study utilizes use observations of downwelling irradiance from a glider and three floats to determine the spatial and temporal variability of solar absorption across the southern Bay of Bengal during the 2016 summer monsoon. The effect of changing scale depths of blue wavelength band on the Chlorophyll-a (Chl-a) concentration and SST are estimated and discussed in terms of the physical processes (e.g. summer monsoon current variability, eddy location, etc). KPP model used with different R and h2 optical parameters to examine the sensitivity of Chl-a (blue band e-folding depth) to SST. The unique measurements from the glider and three profiling floats are well presented in the paper. Overall, the paper is written well and figures are of good quality.

Specific comments:





In Abstract: Chlorophyll influences regional climate through its effect on solar radiation absorption and thus sea surface temperature (SST) Chlorophyll affects climate through other processes as well (e.g. air-sea gas exchange, CO2 uptake).
Mention in figure caption- what do the error bars indicate in figure 4?