

Biogeosciences Discuss., referee comment RC2
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Comment on bg-2022-151

Anonymous Referee #2

Referee comment on "Diel variations in planktonic ciliate community structure in the northern South China Sea and tropical Western Pacific" by Chaofeng Wang et al., Biogeosciences Discuss., <https://doi.org/10.5194/bg-2022-151-RC2>, 2022

The authors try to understand the diel variation of planktonic ciliates in northern South China Sea and tropical West Pacific. This investigation requires tremendous efforts and times. It must be very valuable information for understanding of plankton ecology and ciliates community.

This manuscript, however, have weak point on (1) sampling design and (2) reliability of data obtained for short period.

(1) In your study, sampling location is fixed. You do not trace the same ciliate community conveyed by the continuous water flow. Small-scaled patchiness and small-scaled non-homogenous distribution of planktonic organisms are frequently observed in any sea areas. You had better to explain the validity of your sampling design with referring to this point.

(2) Sampling period at tWP station might be too short. Daytime sampling was carried out only two times in the same day. This sampling design might be unreasonable for comparing ciliate community structure between daytime and nighttime. You should explain the reliability of your results obtained under this sampling design.

In 'Results'

Sentence-to-sentence connection is frequently not smooth; meaning of each chapter is incomprehensible. This might be mainly due to the excessive change of subject in each sentence. You had better to rewrite sentences in each chapter of result part.

Statistical test (significant analysis in statistics) should be indispensable when you compare distributional depth of ciliates or compare standing crops of ciliates between daytime and nighttime or between nSCS and tWP.

Fig. 7 (three-dimensional graphs)

Data points are many and complicated. You had better to improve these graphs more comprehensible.

Fig. 8, Fig. S4, Fig. 5S

Data points are many and sometimes overlapped. I can not understand the difference between daytime pattern and nighttime pattern.

In 'Discussion'

Line 331, 'diel-vertical-migration'

You had better to discuss some reasonable factors affecting this 'diel vertical migration'.

You had better to check that migrating scale (or distance) of ciliates estimated from the diel variation of WMD is comparable to the reported swimming speed (or swimming ability) of marine planktonic ciliates.

Line 335, 'The ciliate vertical distribution patterns were the same between day and night'

This sentence must be in contradiction with the sentence of 'WMD of aloricate ciliates and tintinnids deferred between day and night (line 332)'. It must be also in conflict with the sentence of 'ciliate abundance and biomass were higher in night than in day (line 342)'.

Line 378, 'Heterotrophic tintinnids feed on ----- in the ocean.'

I can not understand the meaning of connection between this sentence and the previous sentence. This discontinuity might make the chapter unclear. You had better to rewrite the sentence more clearly.

Line 394, 'nutrient loaded'

You had better to describe theoretical processes from this nutrient load to ciliate increase. In Fig. 2, chl-a concentration in the surface layer was very low and phytoplankton must not be promoted by the loaded nutrients.

Line 404, 'We speculate that ----- could be the main reason of the disagreement.'

You had better to describe the theoretical reason on your speculation.