

Note to the editor: I am the so-called “naïve” reviewer on this topic.
It was difficult to review it because of the lack of lines and pages numbers.

The authors test empirically the emergent neutrality hypothesis for phytoplankton community, which has been mainly tested based on the theoretical level but never empirically. The study used data from a tropical river.

The topic is original and interesting, but major revisions are needed. My main concern would be that a lot of results were discussed in the discussion section without being clearly exposed in the results section. This section would clearly deserve more attention and details. The statistical methods used to test the neutrality hypothesis are original but a lot of them are not explained or described.

Abstract

It would have been interested to give more details on the data in the abstract (e.g. multidimensional trait similarity is too vague)

“two stable main clumps”: what does “stable” mean here?

Introduction

“limited observational studies from a wide range of ecosystems” : a bit paradoxal, please explain ; precise which ecosystems ? what are the main results of the theoretical studies ?

“due to their highly **speciose** communities” : typo to correct

Functional difference and distinctiveness: better explain here the differences between the two indices

River Continuum and Flood Pulse: better explain the link between these two concepts and your study

I am not sure to fully understand H2; what is the reproductive success for phytoplankton ?

Methods

A map of the sampling stations would be necessary

“We set three river stretches”: Are the stretches the same along time? How the nine stations are related to the stretches? Maybe add the profiles in suppl. information file?

“A detailed description of the biological and physico-**chemical** sampling methodology....”: typo to correct

Sampling is not clear: which device? How were the traits measured? How many individuals per sample were measured?

Please better show the number of samples and replicates used in this analysis

Statistical methods:

This section is globally clear, but a lot of details are needed to fully understand what was used (e.g. how the functional space was obtained,...).

We better understand the difference between functional difference and distinctiveness in the methods section (but better explain it in the introduction section).

Clumpy pattern

I did not fully understand how and why the niche axis was divided.

Functional distinctiveness

Please better explain how the functional space was obtained.

Results

MBFG groups: large size overlapping; a maybe naïve question arises: is it thus relevant to use biovolume as the main niche axis while it is so widely distributed among MBFG groups?

The three groups comprised 87% of a total of 150 recorded species; and in terms of abundance?

Why is there different species in the clumps by stretches and seasons? Why showing two clumps while one or three clumps seemed to appear sometimes?

Figure S1: please consider some points which seem to be outlier?

The lack of significance in clump II come from a smaller replicates number

The results section would deserve more details. A lot of results were discussed in the discussion section without being clearly shown or explained. This led to a global feeling of too speculative results.

Discussion

“The HDH does not predicts any particular trait distribution and” ; please finish the sentence

In the second paragraph, this is not clear why the TDH could not be one other explanatory theory of the clumpy aggregations found in the study.

“not surprisingly.....” : an example of results that is not clearly shown in the Results section

“...we observed a niche-based driven assembly process at clump I” : please better explain the results leading to this conclusion

The predation as a limiting factor controlling body size is not discussed.