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Biogeosciences Discussions

Interactive comment on "Technical Note: On the determination of enclosed water volume in large flexible-wall mesocosms" *by* J. Czerny et al.

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General comments

This Technical Note describes a method to estimate the real volume of the large flexible-wall mesocosm bags by the salt brine addition. The appreciation of the real volume of the mesocosms is an important aspect when for example the nutrients should be added or when mesocosms water should be acidified. The manuscript is well organized and written describing the employed methodology for salt preparation, conservation, calibration and addition to the mesocosms. The examples of two testing experiments were presented and discussed clearly showing the efficiency of this method. The manuscript can be published with some revisions satisfying the following questions and comments.

Specific comments

The increase of salinity, even one unity, is not without any consequence for the organisms. What could be the consequences for the physiology of organisms and their interactions? For the organism responses to the applied treatments (ex. acidification or nutrient addition), is there any interference with the effect of salinity increase on organisms? This aspect should be mentioned and discussed in the revised manuscript.

To well appreciate the salinity and to make a good profile for initial salinity, the water column of a stratified mesocosm was homogenized using 5 min bubbling with compressed air (Fig. 2a). It is very useful to add a figure to show the salinity profile after the salt addition and when the stratification was again established in the mesocosm. This figure will show clearly the stratified salinity profiles before and after salt addition demonstrating how the adding salt distributed and stabilized in the stratified condition.

Fig. 1. The salinity in Fig 2b is presented with two decimal precisions (e.g. 18.65) to better demonstrate the differences between the three salinity profiles. Please present the salinity also in Fig. 2a and especially in Fig. 2c with two decimal precisions to see better the differences of three replicated salinity profiles.

Fig. 3. Please add the standard deviations (or the range of the observations) for each of the nine measured points for two calibration curves both for ΔS and for Y axis.

Technical corrections

Fig. 3. Please homogenize the nomination of Y axis in this Figure (e.g. SW : Brine (kg)) and in the manuscript (e.g. SWâĂćBrine$-$1 (kg âĂć kg$-$1).

Table 1 and Table 2. Please homogenize the unity of mesocosm volume in these Tables. The unity in Table 1 is (t) and in Table 2 is (m3).

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