Biogeosciences
Discussions

Interactive comment on "The influence of episodic flooding on pelagic ecosystem in the East China Sea" *by* Chung-Chi Chen et al.

Anonymous Referee #2

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Review of Chung-Chi Chen et al submitted to Biogeosciences The aim of this paper is stated to 'reveal the effects of riverine input of dissolved inorganic nutrients on the plankton communities that support heterotrophic processes in the East China Sea shelf ecosystem between periods of non-flooding and flooding.

Generally the topic of the paper is clearly introduced as a comparison of data collected during summer surveys of the ECS in July 2009 and 2010 with 2010 being a year when exceptional river flows from the Changjiang river impacted the coast waters of the ECS.

The methods are reasonably clearly described with references to several previous papers by the research team. However the collection of zooplankton needs more explanation – if they were vertical hauls through the water column give the depth range. Were the zooplankton preserved in formalin prior to counting?....Also it is rather non-

standard to use GF/F filters to collect 14C labelled phytoplankton following incubations. How significant was the loss of small phytoplankton ie <1um on the 14C uptake rates. Also as this 14C data was only collected during the 2010 survey I suggest it could be removed from the paper. Determining oxygen respiration rates from dark incubation of enclosed water samples by difference between initial fixed samples and final incubated bottles using the Winkler method to analyse for dissolved oxygen is a standard approach. However based on only two initial and two final replicates I suggest will yield low precision measurements. It is standard practise to use at least 4 replicates of initial and final bottle measurements. The precision stated is only really the difference divided by the mean of two replicates and I would suggest rather unreliable.

My main problem with this paper however is the section labelled Results and Discussion. This section of the paper is 18 pages long! If the paper is to be resubmitted I strongly recommend that the results and discussion are presented as two different sections and the discussion section greatly shortened. The discussion and interpretation of the data currently included in the paper is at best speculative and in many places vague with the word 'might' used very frequently in numerous sentences. For example Page 19 lines 326-328 Page 19 line 340 Page 21 lines 323-375 Page 22 line 392 plus many more scattered throughout this section.

The conclusion section also needs to be much shorter and report the studies main findings without including too many references to other studies. In summary I strongly recommend this paper only be considered for publication if following resubmission the results and discussion are rewritten as separate sections and the discussion is greatly shortened and written less speculatively. Specific Comments Page 2 line 42; 'vigorous plankton metabolic activities especially phytoplankton ' – rather vague- be more specific eg respiration? Production? Page 2 line 43 define 'SSS' page 2 line 44 '...zooplankton might be ...' far too vague in abstract. Page 5 line 72 line avoid using the word 'tremendous' Page 5 line 78 and elsewhere delete 'psu' salinity has no units now. Page12 line 211 'previously documented values' – be more specific ie when?

Page 13 line 230 change 'trailing' to 'previous' Page 15 line 261 the single high phosphate concentration also evident on figure 1 looks to be an analytical anomaly. Page 17 line 304 and table 2 data. I do not believe it is useful or that accurate to estimate the total chlorophyll a etc in the ECS. I suggest deleting table 2. Page 46 and 47 Figure 1 and 2. The contour plots are not very clear. The sampling locations need to be more clearly indicated by lager clear symbols.

Figure 3 Although the relationships shown apparently are significant- the considerable scatter is not very convincing. If the one high chlorophyll point is removed from figure 3a is the relationship still significant? The relationships might be more usefully illustrated if the data from each year is shown on separate plots ie 2009 in upper figure and 2010 on lower figure with axis ranges the same on both figures.