

Interactive comment on “Benthic mineralization and nutrient exchange over the inner continental shelf of western India” by A. K. Pratihary et al.

Anonymous Referee #1

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The paper by Pratihary et al. develops an experimental study on the benthic nutrient cycling from the inner shelf of Western India, by contrasting the response to two monsoon regimes (upwelling-favorable and downwelling-favorable) and the corresponding anoxic/suboxic conditions in the overlying bottom water. The paper describes in detail the environmental setting, the experimental setup, and also develops a comprehensive discussion on several aspects of nutrient cycling, fluxes, etc., and their coupling/ecological impact with pelagic processes, as primary productivity. The paper brings a valuable contribution to the understanding of the role of benthic nutrient cycling in coastal environments. Nevertheless some issues need to be improved on my understanding in order to be published in Biogeosciences.

A question for the validity of the research is the lack of replicates in each of the experi-

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ments. Actually the authors do not discuss this issue, or state why the non replication of the experiments is justified. On this same point, the statistical tests that are used in the study are not explained in the methodology (the p-values are given but the tests are not mentioned or described).

On the other hand, the figures 5a-5c are good syntheses of the nutrient cycling seasonal changes. However while Figures 5a and 5c correspond directly with the two seasons under which the experiments were done, Figure 5b does not. I recommend to delete the months (April, June-July, October) from the captions in the figure, and include the interpretation of each experiment related to the seasonal signal very early in the Discussion. Then the figure legends should indicate the experiments that were used in each case.

Minor observations: Table 1. Consider to change it to a figure/diagram. Table 2. What are the errors for the measured fluxes? if they come from the fit tests, indicate that in the legend with proper explanation. Figures 5a/b/c. Standardize: sediment oxygen consumption or benthic oxygen consumption?

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