

Interactive comment on “The influence of hypercapnia and macrofauna on sediment nutrient flux – will ocean acidification affect nutrient exchange?” by H. L. Wood et al.

Anonymous Referee #2

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This is an interesting MS that describes the influence of *A. filiformis* in modifying nutrient flux rates across the sediment-water boundary and the impact of CO₂-related acidification on this process. In this context, the sea floor plays an important role in the regulation of the chemical composition of water. Process in sediments is also an important link or sink in the biogeochemical cycles of elements. Take into consideration that the ocean acidification add other variable to this scheme, we need increase understanding of these processes in order to determine the potential effect of hypercapnia on the biological and chemical rates in the ocean. Herein, I list two specific comments and question to the authors about this MS.

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In the discussion section, the authors mentioned that “rather the effect of hypercapnia and lowered pH on bacteria and microphytobenthos may have been greater significance in understanding the changes to nutrients fluxes seen here”. I recommend that authors including bacteria and microphytobenthos abundance data. This data exist?, could you tell me why the authors suggested that bacteria and microphytobenthos is important in the study, without data?. It is known that change in the pH should be a great effect on the physiological rates, in particular on calcified organisms in the seafloor such as bivalve, ophiuroids and echinoids). AF is a well distributed and abundant brittle star, which probably should be more sensible to pH change with the time. If so, under experimental conditions of this study, it is possible that nutrient fluxes rates were affected more due to bioirrigatory activity rather than physiological responses (oxygen uptake)?

Interactive comment on Biogeosciences Discuss., 6, 2387, 2009.

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