

Interactive
Comment

***Interactive comment on* “Distribution and bacterial availability of dissolved neutral sugars in the South East Pacific” by R. Sempéré et al.**

Anonymous Referee #1

Received and published: 2 April 2008

General comments:

The paper by Sempere et al. describes the distribution and bacterial availability of dissolved neutral sugars at four different sites in the South East Pacific. Glucose was found to be the most abundant total dissolved neutral sugar (TDNS) at all sites and almost all depths. Strong differences in TDNS concentrations, however, were detected between the four sites. Surprisingly low concentrations of TDNS were measured in the upwelling area off the coast of Chile what was explained by a high turnover of labile DOM. Furthermore, no or little effect of sunlight on DOM bacterial assimilation was observed for the Chile upwelling system and the South Pacific Gyre, while significant stimulation was found for Marquesas Islands and the eastern part of the Gyre. Overall, the paper is informative and well written. The comparison of the four sites is important

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for a basic understanding of the different ecosystems. For a more comprehensive understanding of the processes in nature, however, some data about bacterial numbers, composition and function of the communities are necessary. Thus, we end with a description of the potential substrates, but do not know which bacteria are involved in the turnover.

I suggest that the authors think about more statistical analyses of their data from which some more conclusions could be derived.

The observed coupling between primary and bacterial productions and high turnover of labile DOM in the Chile upwelling should be discussed with other data from the literature, e.g. from Simon and Rosenstock (2007, *Limnol. Oceanogr.*, vol. 52, p. 85-95).

Specific comments:

page 731, line 23-25: Rephrase the sentence to make it comprehensible.

page 734, line 23: Please describe briefly the possibility of a terrestrial influence in this area.

Table 1: Include the total depth at the different sampling sites.

Fig. 1: ... upwelling off Chile (UPW) (indicated with a star). I can not find any stars in this figure.

Fig. 5: In statistics standard deviations are only allowed if you have at least triplicates.

Interactive comment on Biogeosciences Discuss., 5, 725, 2008.

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