

Interactive comment on “Dynamics of transparent exopolymer particles (TEP) during the VAHINE mesocosm experiment in the New Caledonia lagoon” by I. Berman-Frank et al.

Anonymous Referee #2

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It is one of a series of papers describing long and extensive large-scale bioassay experiment involving many researchers. The multinational team has accumulated an extensive dataset that is presented as a series of papers in the special issue of Biogeosciences. Unfortunately, the mesocosm manipulation did not induce expected (and measurable) change in TEP concentration. Instead, TEP production and consumption seem to be tightly coregulated. Despite this almost negative outcome, the authors managed to prepare well written report that uses the wealth of available data for detailed analysis of the trends and correlations. The unique dataset obtained during the experiment is worth publishing, even if it does not bring any major breakthroughs. It proves the complexity of the microbial system in the lagoon and its ability to maintain

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homeostasis. I have the following questions: 1. Looking at Fig.1, it seems that the only major difference between the mesocosms and the surrounding water is the spike in TEP concentration inside mesocosms immediately after the P addition. The other trends seem to be similar. Any idea why? 2. Did the authors check whether the optical absorption method using the Alcian blue dye staining to determine TEP concentration is linear? Was the filter absorption measured using the integrating sphere? If not, was there any significant scattering? 3. Do the authors have control data from the lagoon outside the mesocosms to be added into Figs.3-6? 4. Any idea why was TOC significantly higher in M3? Why TEP did not increase proportionally?

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