

## ***Interactive comment on “Biochemical characteristics and bacterial community structure of the sea surface microlayer in the South Pacific Ocean” by I. Obernosterer et al.***

### **Anonymous Referee #1**

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General comments The paper contributes to the increasing evidence that, contrary to the commonly held few originating from the 60ies and 70ies, surface microlayer prokaryotic communities are not substantially different from those in the water layers below. Thus, there is no specific bacterioneuston community. Also, bacterial biomass production is not elevated in the microlayer of the open Pacific, corroborating previous findings from the Atlantic. The paper is written in a clear way and well structured.

Specific comments p.2814, line 8: is the light path really 2 m? p.2815, line 13: &#8230;prokaryotes&#8230;. p.2822, line 9 and elsewhere: &#8216;Eubacteria&#8217; is the old term for Bacteria. Use &#8216;Bacteria&#8217; throughout the

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text and in the Figs. p.2822, line 10-11: actually it is unlikely if CARD-FISH is used that the lower percentage of DAPI-stained cells detect by the bacterial probe reflects lower overall activity. It might be more likely that the permeabilization of the cell wall was inefficient in the SML samples lading to an overall low recovery efficiency. This possibility should be at least discussed.

The discussion could highlight a bit more the emerging issue that there is apparently no specific bacterioneuston community. This could be substantiated with the SSCP data, also stressing, however, at the same time the limited resolution of this fingerprinting approach. Also, a concluding paragraph on the impact of the finding that there is no elevated activity detectable in the SML as compared to the waters below on the air-sea exchange of gases might be useful.

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Interactive comment on Biogeosciences Discuss., 4, 2809, 2007.

**BGD**

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