

Interactive comment on “Assessing the ecological status of plankton in Anjos Bay: a flow cytometry approach” by G. C. Pereira et al.

Anonymous Referee #1

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This manuscript contains useful information to develop the real time monitoring system for microbial community. Combination of CytoBuoy and FACScan cytogram can make a quick analysis and provide total profile of the community. While the idea of authors is very good, several concerns have been found in the manuscript. Please consider the following suggestions and comments, and revise your manuscript.

As general comment, author should focus on the technical issues to determine microbiological profile of surface water using in situ/ex situ flow cytometric system, rather than ecological issues of Anjos Bay. Because the data to evaluate ecological conditions is insufficient, e.g. vertical profiles, growth activity and some other biochemical determinations. Map quality in Fig 1 is too poor to understand the geographic and oceanographic conditions of monitoring site. It is hard to accept the conclusion on

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ecological situation appeared in the Discussion.

The procedure developed by Brussaard (2000) should be described concisely, on reagents, concentration, and staining process.

The area for background noise should be indicated in the cytograms.

The definition for G3 is unclear. Although Zubkov (2001) found three groups of bacterioplankton, sub-population pattern in the cytogram may differ from this manuscript. Authors should make a careful description and give a temporary definition.

Both of Suttle (2005) and Brussaard (2000) did not define the V1 and V2 sub-population. I could only find the definition in the following article dealt with marine viral sub-populations by flow cytometer: Marie, D. et al. Appl. Environ. Microb., 1999, 65: 45-52.

While sub-populations, e.g. cyanobacteria, microalgae, LDNA, HDNA, G3, V-1 and V-2, discriminated readily in the cytograms, correlation analysis show the results from combined population, e.g. autotroph, heterotroph and virus. Seasonal changes and depth profiles of these sub-populations have been reported. Why did not author analyze the seasonal change and geographical distribution using the data of sub-populations respectively. The following articles may be useful: Nishimura Y. et al. Appl. Environ. Microbiol. 2005, 71: 5828-5836; Seymour J R et al. Marine Ecology Progress Series, 288:1-8.

The results of spatial distribution of surface community in Fig 5 are quite interest and most important in this manuscript. However, the distribution patterns are calculated only for three cases of SACW. To elucidate the ecological situations, the result of distribution pattern without SACW event should be shown. Also, author should explain how three cases of SACW is similar to.

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