Ocean Sci. Discuss., 6, C253–C254, 2009
www.ocean-sci-discuss.net/6/C253/2009/

Ocean Science
Discussions

Interactive comment on "Sensors for observing ecosystem status" *by* S. Kröger et al.

AH Harashima (Referee)

harashim@nies.go.jp

Received and published: 16 July 2009

Comments to the paper " Sensors for observing ecosystem status" by S. Kröger, E. R. Parker, J. D. Metcalfe, N. Greenwood, R. M. Forster, D. B. Sivyer, and D. J. Pearce

This review paper is well-organized, comprehensive and quite useful as a bird's-eye view of the current (and future) science on the sensing techniques to reveal various aspects in marine ecosystems. It is of no problem for this paper to be published in the present form. As I would like to make comments as follows, to refrect them or not is left to the authors' thoughts.

A paragraph in the section 2.2.2 "Primary productivity" refers to the Ferrybox program in the context of DO measurements. However, to use the ferry boats or more generally "ship of opportunity" has a wider applicability of any flow-through type sensing, automated sampling and on-line data transmissions. Therefore, it may be appropriate to

discuss it in the "1. Introduction" or neaside of Fig.2.

We ouselves tested various sensing and sampling techniques, e.g., nutrients, pH, DO, pCO2, pigments, fluorescence, taxonomic identification and particle size distribution of planktons, in our marine ecosystem monitoring program using ferry boats: (http://db.cger.nies.go.jp/gem/moni-e/sea/SE_Pacific/me01.html), and have confirmed their feasibility as were summarized in: Harashima et al. (1997), Monitoring algal blooms and related biogeochemical changes with a flow-through system deployed on ferries in the adjacent seas of Japan, in Kahru, M. and Brown, C. W. (eds.) "Monitoring Algal Blooms", Springer.

Considering the key words of long-term and short "revisit time" to establish the effective time-series to assess the anthropogenic effects, use of ferry is more cost effective than operating the research vessels. We need not care about the water-proof or anti-rolling measures unlike the system on the mooring buoy system. Thus, use of ferries have been crucial in our research works: Harashima et al. (2006), Verification of the silica deficiency hypothesis based on biogeochemical trends in the aquatic continuum . . . , Ambio 35, 36-42.

These merits have been discussed not only in our team and in the Ferry box society but also more general environmental management-oriented contexts such as a phrase "Regional sea and coastal monitoring is increasingly based on an integration of remote sensing tools combined with online monitoring using ferries and other ships of opportunity and autonomous mooring at key locations", in a recently published book: Urban, E. R. et al.(eds., 2008) Watersheds, Bays, and Bounded Seas, The Science and Management of Semi-Enclosed Marine Systems, Island Press.

Again, the authors need not follow the view of mine nor these works. Finally I would like to show my thanks to the authors to have an opportunity to discuss these things.

Interactive comment on Ocean Sci. Discuss., 6, 765, 2009.