

Interactive comment on “Global ocean biomes: mean and temporal variability” by A. R. Fay and G. A. McKinley

Anonymous Referee #1

Received and published: 7 April 2014

Ocean provinces are useful to aggregate data for further analysis. In the present paper the authors develop a new set of ocean provinces but they deliberately ignore coastal areas. Yet, coastal areas are important in marine biogeochemistry, and are “hot spots” of primary production, CO₂ fluxes, DMS fluxes, CH₄ fluxes, etc. . . Hence, the proposed ocean provinces are of limited use, and do not cover the “global” ocean as stated in the title.

The authors show that there are inter-annual variations in limits (and surface) of the provinces, yet, they do not explore the reasons of this inter-annual variations. Is this related to ENSO ?

Graphical comparison with other ocean province classifications (Reygondeau,

C16

Longhurst) could have been useful.

In principle, a figure should be understood from the figure legend alone, without having to read the ms. The figures in the preset ms do not achieve this: from legends of Figs 1 & 2 it is not possible to understand the difference between “core” and “mean”, what the abbreviations stand for, what do the white areas stand for.

The map of biomes was present in Fig. 1 of Fay & McKinly (2013) and methodology to descimate the biomes also presented in the material and methods of the same paper. It is unclear what is the aim of the present ms.

References

Fay, A. R., and G. A. McKinley (2013), Global trends in surface ocean pCO₂ from in situ data, *Global Biogeochem. Cycles*, 27, 541–557, doi:10.1002/gbc.20051

Interactive comment on Earth Syst. Sci. Data Discuss., 7, 107, 2014.

C17