Biogeosciences Discuss., 6, C480–C481, 2009
www.biogeosciences-discuss.net/6/C480/2009/

Biogeosciences Discussions

Interactive comment on "Seasonal and mesoscale variability of oceanic transport of anthropogenic CO_2" *by* Z. Lachkar et al.

Anonymous Referee #1

Received and published: 21 May 2009

This manuscript describes a modeling analysis of the impact of seasonal and mescoscale variability on oceanic transport of anthropogenic CO2 and heat. The manuscript presents some interesting and important results (in particular estimates of biases in transport estimates that do not account for seasonal and eddy variability) that are suitable for publication in Biogeosciences. The manuscript is well written, and I believe acceptable in its current form. I only have a couple of minor suggestions.

1. (Pg 4239, line 20) There are several papers as well as the Matsumoto and Gruber that discuss potential errors in the GLODAP estimates. E.g.,

Waugh, et al, 2006: Anthropogenic CO2 in the oceans estimated using transit time distributions, Tellus B, 58B, 376–389.

Vazquez-RodrÃśguez et al., 2009: Anthropogenic carbon distributions in the Atlantic Ocean: data-based estimates from the Arctic to the Antarctic, Biogeosciences, 6, 439–451, 2009.

Alvarez, M., et al. 2009: Estimating the storage of anthropogenic carbon in the subtropical Indian Ocean: a comparison of five different approaches, Biogeosciences, 6, 681-703.

2. I think it would help if some of the figures were in more standard format / axes limits which would help comparisons. E.g., Fig 12 and 13 should be 4 panel plots like Fig 4 and 5, with same axes limits. Also limits for figs 7 and 8 are different.

Interactive comment on Biogeosciences Discuss., 6, 4233, 2009.