

Interactive comment on “A global carbon assimilation system based on a dual optimization method” by H. Zheng et al.

Anonymous Referee #2

Received and published: 12 December 2014

H. Zheng et al. present in their manuscript ‘A global carbon assimilation system based on a dual optimisation method’ an inversion of 8 years of atmospheric CO₂ data to estimate terrestrial and oceanic CO₂ fluxes. The authors use what they call a ‘dual optimisation’ method to solve for scaling factors of terrestrial oceanic flux patterns based on prior fluxes obtained from the terrestrial ecosystem model BEPS and CarbonTracker output in the case of the ocean. These scaling factors are differentiated by BEPS plant functional types and latitudinal zones. In addition, the authors also solve for the fluxes directly, that represents the dual optimisation method. The manuscript is not very clear in its methodology description. Therefore it is unclear if the flux is solved for globally or per gridcell on a 1x1 degree resolution.

Besides this unclarity there is a major problem with the set-up of this inversion sys-

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper



tem. The authors write that they use optimised ocean fluxes from CarbonTracker as their prior ocean fluxes (p14284, ll 26/27). Since the optimised CarbonTracker ocean flux has been derived from essentially the same atmospheric CO₂ observations as used in this study for the inversion, the prior ocean flux is then of course not independent from the CO₂ concentration used in this study constituting a double usage of the observational data. This has to be fixed before one can analyse and draw any conclusions from the results.

Interactive comment on Biogeosciences Discuss., 11, 14269, 2014.

BGD

11, C7327–C7328, 2014

Interactive
Comment

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper

C7328

