

Correction to “A joint atmosphere-ocean inversion for surface fluxes of carbon dioxide: 1. Methods and global-scale fluxes”

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[1] In the paper “A joint atmosphere-ocean inversion for surface fluxes of carbon dioxide: 1. Methods and global-scale fluxes” by A. R. Jacobson et al. (*Global Biogeochemical Cycles*, 21, GB1019, doi:10.1029/2005GB002556,

2007), errors were introduced into the three *Takahashi et al.* [1999, 2002] entries in the final column of Table 2. The corrected table is as follows.

Table 2. Summary of Global Estimates of Air-Land and Air-Sea Fluxes^a

Source	Global Air-Land Flux	Global Air-Sea Flux		
		Anthropogenic Φ_{anthro}	Preindustrial $\Phi_{\text{preindust}}$	Contemporary Φ_{contemp}
IPCC TAR	-1.4 ± 0.7^b			$-1.7 \pm 0.5^{b,c}$
T3L1	-1.3 ± 1.4			-1.5 ± 1.4
T3L2	-1.5 ± 1.0			-1.3 ± 1.0
Bopp O_2/N_2	$-1.7 \pm 0.9^{d,e}$ (-1.2 ± 0.9) ^d			$-1.9 \pm 0.9^{e,c}$ (-2.3 ± 0.7) ^d
Keeling O_2/N_2	$-1.7 \pm 0.8^{b,c}$ (-1.3 ± 0.8) ^b			$-1.4 \pm 0.6^{e,c}$ (-1.9 ± 0.6) ^b
Joint	-1.1 ± 0.2	-2.1 ± 0.1	0.4 ± 0.2^c	-1.7 ± 0.2
Gloor inverse		-1.9 ± 0.3 (-1.7 ± 0.3) ^{e,f}	0.4 ± 0.3^c	-1.5 ± 0.4 (-1.8 ± 0.4) ^{c,e,f}
McNeil CFCs				-1.5 ± 0.4 (-2.0 ± 0.4) ^{b,e}
Matsumoto OCMIP				-1.7 ± 0.2 (-2.2 ± 0.2) ^{b,c,e}
Tak99 $k \sim u^2$				-2.1^c
Tak02 $k \sim u^2$				-1.6^c
Tak02 $k \sim u^3$				-2.3^c
MOM3 forward		-2.2 ± 0.2	0.4 ± 0.1^c	-1.7 ± 0.2^c

^aEstimates have been corrected so that river carbon flow is manifested as a land sink and a preindustrial ocean source of 0.45 PgC yr^{-1} (see auxiliary material). Contemporary air-sea fluxes ($\Phi_{\text{contemp}} = \Phi_{\text{preindust}} + \Phi_{\text{anthro}}$) have been scaled to the 1992–1996 period by assuming the anthropogenic component is proportional to the atmospheric concentration perturbation, but air-land fluxes are not scaled. Original estimates, uncorrected for river carbon and unscaled in time, are given in parentheses. “IPCC-TAR 90s” is the estimate of *Prentice et al.* [2001] for the 1990s; “T3L1” and “T3L2” are the TransCom3 control inversions for level 1 [*Gurney et al.*, 2002] and level 2 [*Gurney et al.*, 2004], respectively, both for the period 1992–1996. “Bopp O_2/N_2 ” and “Keeling O_2/N_2 ” represent the oxygen analyses of *Bopp et al.* [2002] for the period 1990–1996 and *Keeling and Garcia* [2002] for the 1990s, respectively. “Joint” is the current joint inversion for the period 1992–1996. “Gloor inverse” is the previous ocean inversion of *Gloor et al.* [2003] scaled to 1992–1996, a result nearly identical to that of *McNeil et al.* [2003] from CFC analysis. “Matsumoto OCMIP” is the summary of forward ocean carbon cycle simulations [*Orr et al.*, 2001], as reported by *Matsumoto et al.* [2004], also scaled to 1992–1996. “Tak99” and “Tak02” represent estimates based on the $\Delta p\text{CO}_2$ analyses of *Takahashi et al.* [1999, 2002] respectively, using quadratic (“ $k \sim u^2$ ” [*Wanninkhof*, 1992]) and cubic (“ $k \sim u^3$ ” [*Wanninkhof and McGillis*, 1999]) gas transfer velocity parameterizations. “MOM3 Forward” are the 1992–1996 fluxes from OCMIP2 biotic simulations for the five models of the MOM3 suite used in the present study (see Table 1 of *Jacobson et al.* [2007]).

^bFor the period of the 1990s.

^cAir-sea fluxes scaled to 1992–1996 by assuming that the anthropogenic flux is proportional to the atmospheric CO_2 perturbation.

^dFor the period 1990–1996.

^eIncludes $0.45 \pm 0.18 \text{ PgC yr}^{-1}$ to account for river carbon fluxes (see auxiliary material).

^fFor the period 1990–1991.