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Corrigendum to

“Source attribution of the changes in atmospheric methane for 2006–2008” published in Atmos. Chem. Phys., 11, 3689–3700, 2011

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In this paper, we assimilate a set of observations of methane (CH₄) and methyl-chloroform (CH₃CCl₃) concentrations into a chemistry-transport model in order to estimate methane sources and sinks for the period 2006–2008. These observations are both sampled flasks and continuous in-situ observations. Two inversion methods are used: the analytical method assimilates monthly observations computed from flask measurements to infer monthly methane fluxes over 11 large regions over the globe; the variational method assimilates daily continuous measurements together with flask measurements to infer weekly fluxes at the resolution of the transport model grid cell (~3×4°). Both inversion methods optimize OH variations using methyl-chloroform continuous observations.

Methane and methyl-Chloroform observations used in our study come from various networks. We did not properly quote all observation networks in the paper.

First, citations and acknowledgements for the largest network of continuous methane measurements, the AGAGE network (Advanced Global Atmospheric Gases Experiment), are missing in the paper. AGAGE network and observations are described in Prinn et al. (2000) and on their website (agage.eas.gatech.edu/index.htm). In addition to the 68 measurement sites assimilated in the analytical inversion, 5 additional continuous time series of methane observations from AGAGE are used in the variational inversion (Prinn et al., 2000; Rigby et al., 2008, AGAGE website): Mace-Head,

Ireland; Trinidad Head, California; Ragged point, Barbados; Cape Matatula, American Samoa; Cape Grim, Tasmania.

Second, citations and acknowledgements for the use of methyl-chloroform observations from AGAGE (Prinn et al., 2000; Prinn et al., 2005) and from NOAA/ESRL (Montzka et al., 2000; Montzka et al., 2011) are also missing in the text. In particular, NOAA data website (ftp://aftp.cmdl.noaa.gov/data/trace_gases/) from GCMS analyses of flasks were used in our analysis together with continuous data extracted from AGAGE website <http://agage.eas.gatech.edu/data.htm>.

All appropriate missing citations for the use of methane and methyl-chloroform observations used in the original paper are given below.

We apologize to the scientists in charge of these networks, and especially to Dr. R. Prinn, Dr. R. F. Weiss, and Dr. S. A. Montzka, for this problem, which was not intentional but linked to a weakness in the management of the large set of various observations assimilated in our variational inversion system. We are aware of the challenge in maintaining a high-quality observation network over the long-term, in a short-term oriented world. Without this issue, data PIs from AGAGE-CH₄/CH₃CCl₃ and NOAA/CH₃CCl₃ would have been proposed co-authorship as other data principal investigators from NOAA, CSIRO, SAWS, and LSCE.

References

- AGAGE data website: <http://agage.eas.gatech.edu/index.htm>, (last access: 31 March 2012), 2010.
- Montzka, S. A., Krol, M., Dlugokencky, E., Hall, B., Jockel, P., and Lelieveld, J.: Small Interannual Variability of Global Atmospheric Hydroxyl, *Science*, 331, 67–69, 2011.
- Montzka, S. A., Spivakovsky, C. M., Butler, J. H., Elkins, J. W., Lock, L. T., and Mondeel, D. J.: New observational constraints for atmospheric hydroxyl on global and hemispheric scales, *Science*, 288, 500–503, 2000.
- NOAA data website: ftp://aftp.cmdl.noaa.gov/data/trace_gases/, (last access: 31 March 2012), 2010.
- Prinn, R. G., Weiss, R. F., Fraser, P. J., Simmonds, P. G., Cunnold, D. M., Alyea, F. N., O'Doherty, S., Salameh, P., Miller, B. R., Huang, J., Wang, R. H. J., Hartley, D. E., Harth, C., Steele, L. P., Sturrock, G., Midgley, P. M., and McCulloch, A.: A history of chemically and radiatively important gases in air deduced from ALE/GAGE/AGAGE, *J. Geophys. Res.*, 115, 17751–17792, 2000.
- Prinn, R. G., Huang, J., Weiss, R. F., Cunnold, D. M., Fraser, P. J., Simmonds, P. G., McCulloch, A., Harth, C., Reimann, S., Salameh, P., O'Doherty, S., Wang, R. H. J., Porter, L., Miller, B. R., and Krummel, P.: Evidence for variability of atmospheric hydroxyl radicals over the past quarter century, *Geophys. Res. Lett.*, 32, L07809, doi: 10.1029/2004GL022228, 2005.
- Rigby, M., Prinn, R. G., Fraser, P. J., Simmonds, P. G., Langenfelds, R. L., Huang, J., Cunnold, D. M., Steele, L. P., Krummel, P. B., Weiss, R. F., O'Doherty, S., Salameh, P. K., Wang, H. J., Harth, C. M., Mühle, J., and Porter, L. W.: Renewed growth of atmospheric methane, *Geophys. Res. Lett.*, 35, L22805, doi:10.1029/2008GL036037, 2008.