

Publications

Overall Introduction

Prinn, R.G., R.F. Weiss, P.J. Fraser, P.G. Simmonds, D.M. Cunnold, F.N. Alyea, S. O'Doherty, P. Salameh, B.R. Miller, J. Huang, R.H.J. Wang, D.E. Hartley, C. Harth, L.P. Steele, G. Sturrock, P.M. Midgley, and A. McCulloch, A History of Chemically and Radiatively Important Gases in Air deduced from ALE/GAGE/AGAGE, *J. Geophys. Res.*, 105, 17,751-17,792, 2000.

Prinn, R.G., J. Huang, R.F. Weiss, D.M. Cunnold, P.J. Fraser, P.G. Simmonds, A. McCulloch, C. Harth, P. Salameh, S. O'Doherty, R.H.J. Wang, L. Porter, and B.R. Miller, Evidence for significant variations of atmospheric hydroxyl radicals in the last two decades, *Science*, 292, 1882-1888, 2001.

Instrument Introduction

Miller, B. R., R. F. Weiss, P. K. Salameh, T. Tanhua, B. R. Grealley, J. Mühle, P. G. Simmonds, Medusa: A Sample Preconcentration and GC/MS Detector System for in Situ Measurements of Atmospheric Trace Halocarbons, Hydrocarbons, and Sulfur Compounds, *Analytical Chemistry*, ASAP Article; doi: 10.1021/ac702084k, 2008.

1. Species from GCMD measurements

CFC-11, CFC-12:

Cunnold, D.M., R.F. Weiss, R.G. Prinn, D.E. Hartley, P.G. Simmonds, P.J. Fraser, B.R. Miller, F.N. Alyea, and L. Porter, GAGE/AGAGE measurements indicating reduction in global emissions of CCl₃F and CCl₂F₂ in 1992-1994, *J. Geophys. Res.*, 102, 1259-1269, 1997.

CH₃CCl₃:

1. All Stations

Prinn, R.G., J. Huang, R.F. Weiss, D.M. Cunnold, P.J. Fraser, P.G. Simmonds, A. McCulloch, C. Harth, S. Reimann, P. Salameh, S. O'Doherty, R.H.J. Wang, L.W. Porter, B.R. Miller, and P.B. Krummel, Evidence for variability of atmospheric hydroxyl radicals over the past quarter century, *Geophys. Res. Lett.*, 32, L07809, doi:10.1029/2004GL022228, 2005.

Prinn, R.G., J. Huang, R.F. Weiss, D.M. Cunnold, P.J. Fraser, P.G. Simmonds, A. McCulloch, C. Harth, P. Salameh, S. O'Doherty, R.H.J. Wang, L. Porter, and B.R. Miller, Evidence for significant variations of atmospheric hydroxyl radicals in the last two decades, *Science*, 292, 1882-1888, 2001.

2. European Stations

Reimann, S., J.M. Alister, P.G. Simmonds, D.M. Cunnold, R.H.J. Wang, J. Li, A. McCulloch, R.G. Prinn, J. Huang, R.F. Weiss, P.J. Fraser, S. O'Doherty, B.B. Grealley, K. Stemmler, M. Hill and D. Folini, Low European methyl chloroform emissions inferred from long-term atmospheric measurements, *Nature*, 433, 506-509, 2004.

CCl₄:

Simmonds, P.G., D.M. Cunnold, R.F. Weiss, R.G. Prinn, P.J. Fraser, A. McCulloch, F.N. Alyea, and S. O'Doherty, Global trends and emissions of CCl₄ from in-situ background observations from July 1978 to June 1996, *J. Geophys. Res.*, 103, 16017-16027, 1998.

N₂O:

Prinn, R. G., D.M. Cunnold, R. Rasmussen, P.G. Simmonds, F.N. Alyea, A. Crawford, P.J. Fraser, and R. Rosen, Atmospheric emissions and trends of nitrous oxide deduced from ten years of ALE-GAGE data, *J. Geophys. Res.*, 95, 18369-18385, 1990.

CFC-113:

Fraser, P., D. Cunnold, F. Alyea, R. Weiss, R. Prinn, P. Simmonds, B. Miller, and R. Langenfelds, Lifetime and emission estimates of 1,1,2-trichlorotrifluoroethane (CFC-113) from daily global background observations June 1982-June 1994., *J. Geophys. Res.*, 101, 12,585-12,599, 1996.

CH₄:

Cunnold, D.M., L.P. Steele, P.J. Fraser, P.G. Simmonds, R.G. Prinn, R.F. Weiss, L.W. Porter, R.L. Langenfelds, H.J. Wang, L. Emmons, X.X. Tie, and E.J. Dlugokencky, In situ measurements of atmospheric methane at GAGE/AGAGE sites during 1985-2000 and resulting source inferences. *J. Geophys. Res.*, 107, 2002.

Rigby, R. G., Prinn, P. J. Fraser, P. G. Simmonds, R. L. Langenfelds, J. Huang, D. M. Cunnold, L. P. Steele, P. B. Krummel, R. F. Weiss, S. O'Doherty, P. K. Salameh, H. J. Wang, C. M. Harth, J. Mühle, and L. W. Porter, Renewed growth of atmospheric methane, *Geophys. Res. Lett.*, 35, L22805, doi:10.1029/2008GL036037, 2008.

CHCl₃:

O'Doherty, S., D. Cunnold, G.A. Sturrock, D. Ryall, R.G. Derwent, H.J. Wang, P. Simmonds, P.J. Fraser, R.F. Weiss, P. Salameh, B.R. Miller, and R.G. Prinn, In-situ chloroform measurements at AGAGE atmospheric research stations from 1994-1998, *J. Geophys. Res.*, 106, 20,429-20,444, 2001.

CO:

Derwent, R. G., D. B. Ryall, S. G. Jennings, T. G. Spain, and P. G. Simmonds, Black carbon aerosol and carbon monoxide in European regionally-polluted air masses at Mace Head, Ireland during 1995-1998, *Atmos. Environ.*, 35, 6371-6378, 2001.

H₂:

Xiao, X., R. G. Prinn, P. G. Simmonds, L. P. Steele, P. C. Novelli, J. Huang, R. L. Langenfelds, S. O. O'Doherty, P. B. Krummel, P. J. Fraser, L. W. Porter, R. F. Weiss, P. Salameh, and R. H. J. Wang (2007), Optimal estimation of the soil uptake rate of molecular hydrogen from the Advanced Global Atmospheric Gas Experiment and other measurements, *J. Geophys. Res.*, 112, D07303, doi:10.1029/2006JD007241.

Simmonds, P.G., R.G. Derwent, S. O'Doherty, D.B. Ryall, L.P. Steele, R.L. Langenfelds, P. Salameh, H.J. Wang, C.H. Dimmer, L.E. Hudson, Continuous high-frequency observations of hydrogen at the Mace Head baseline atmospheric monitoring station over the 1994-1998 period, *J. Geophys. Res.*, 105, 12105-12121, 2000.

2. Species from GCMS measurements

CH₃Br, CH₃Cl:

Simmonds, P.G., S. O'Doherty, R.G. Derwent, A.J. Manning, D.B. Ryall, P. Fraser, L. Porter, P. Krummel, R. Weiss, B. Miller, P. Salameh, D. Cunnold, R. Wang, and R. Prinn, AGAGE observations of methyl bromide and methyl chloride at the Mace Head, Ireland and Cape Grim, Tasmania, 1998-2001, *J. Atmos. Chem.*, vol 47, issue 3, p 243-269, March 2004.

Cox. M.L. G.A. Sturrock, P.J. Fraser, S.T. Siems, P.B. Krummel, and S. O'Doherty, Regional sources of methyl chloride, chloroform and dichloromethane identified from AGAGE observations at Cape Grim, Tasmania, 1998-2000., *J. Atmos. Chem.*, vol 45, issue 1, p79-99, May 2003.

CH₃I:

Cohan, D. S., G. A. Sturrock, A. P. Biazar, and P. J. Fraser, Atmospheric methyl iodide at Cape Grim, Tasmania from AGAGE observations, *J. Atmos. Chem.*, 44, 131-150, 2003.

HFC-134a, HCFC-141b, 142b, 152a, 22:

Greally, B.R., A.J. Manning, S. Reimann, A. McCulloch, J. Huang, B.L. Dunse, P.G. Simmonds, R.G. Prinn, P.J. Fraser, D.M. Cunnold, S. O'Doherty, L.W. Porter, K. Stemmler, M.K. Vollmer, C.R. Lunder, N. Schmidbauer, O. Hermansen, J. Arduini, P.K. Salameh, P.B. Krummel, R.H.J. Wang, D. Folini, R.F. Weiss, M. Maione, G. Nickless, F. Stordal and R.G. Derwent (2007), Observations of 1,1-difluoroethane (HFC-152a) at AGAGE and SOGE monitoring stations 1004-2004 and derived global and regional emission estimates., *J. Geophys. Res.*, 112, D06308, doi:10.1029/2006JD007527.

O'Doherty, S., D.M. Cunnold, P.G. Simmonds, G. Sturrock, J. Huang, R.G. Prinn, L.W. Porter, P.J. Fraser, P.B. Krummel, B.R. Miller, P. Salameh, R.F. Weiss, R.H.J. Wang, A. McCulloch, S. Montzka, A. Manning, D. Ryall, and R.G. Derwent, Rapid growth of hydrofluorocarbon 134a and hydrochloro-fluorocarbons 141b, 142b, and 22 from Advanced Global Atmospheric Gases Experiment (AGAGE) observations at Cape Grim, Tasmania, and Mace Head, Ireland, *J. Geophys. Res.*, vol 109, No D6, D06310, 10.1029/2003JD004277, March 2004.

Miller, B.R., J. Huang, R.F. Weiss, R.G. Prinn and P.J. Fraser, Atmospheric trend and lifetime of chlorodifluoromethane (HCFC-22) and the global tropospheric OH concentrations, *J. Geophys. Res.*, 103, 13,237-13,248, 1998.

HFC-245fa and HFC-365mfc:

K. Stemmler, D. Folini, S. Uhl, M. K. Vollmer, S. Reimann, S. O'Doherty, B. R. Greally, P. G. Simmonds, A. J. Manning, European emissions of HFC-365mfc, a chlorine-free substitute for the foam blowing agents HCFC-141b and CFC-11, 2007, *Environ. Sci. Technol*, 41, 1145-1151.

M. K. Vollmer, S. Reimann, D. Folini, L. W. Porter, L. P. Steele, First appearance and rapid growth of anthropogenic HFC-245fa (CHF₂CH₂CF₃) in the atmosphere, 2006, *Geophys. Res. Lett.*, 33, L20806, doi: 10.1029/2006GL026763.

H-1211, H-1301:

Sturrock, G. A., D.M. Etheridge, C.M. Trudinger, P.J. Fraser, and A.M. Smith, Atmospheric histories of halocarbons from analysis of Antarctic firn air: Major Montreal Protocol species, *J. Geophys. Res.*, 107(D24), 4765, doi:10.1029/2002JD002548, 2002.

Fraser, P. J., L.W. Porter, P.B. Krummel, B. Dunse, N. Derek, and G.A. Sturrock, HCFCs, HFCs, Halons, minor CFCs and Halomethanes - The AGAGE insitu GC-MS program at Cape Grim, 1998-2000, in Baseline Atmospheric Program (Australia) 1999-2000, Bureau of Meteorology and CSIRO Atmospheric Research, p.93-97, 2003.

Krummel P. B., L.W. Porter, P.J. Fraser, S.B. Baly, B. Dunse, and N. Derek, HCFCs, HFCs, Halons, minor CFCs, PCE and Halomethanes - The AGAGE insitu GC-MS program at Cape Grim, 1998-2002, in Baseline Atmospheric Program (Australia) 2001-2002, Bureau of Meteorology and CSIRO Atmospheric Research, p.57-64, 2004.

Solvents:

Simmonds, P.G., A.J. Manning, D. M. Cunnold, P.J. Fraser, A. McCulloch, S. O'Doherty, P.B. Krummel, R.H.J. Wang, L.W. Porter, R.G. Derwent, B. Grealley, P. Salameh, B.R. Miller, R.G. Prinn, and R.F. Weiss (2006), Observations of dichloromethane, trichloroethene and tetrachloroethene from the AGAGE stations at Cape Grim, Tasmania, and Mace Head, Ireland, *J. Geophys. Res.*, 111, D18304, doi:10.1029/2006JD007082.

3. Species from GCMS, GCMD, and other measurements

CH₄, CO₂, hydrocarbon, methyl halide and particle emission from wildfires:

J. Mühle, T.J. Lueker, Y. Su, B.R. Miller, K.A. Prather, and R.F. Weiss, (2007), Trace gas and particulate emissions from the 2003 southern California wildfires, *J. Geophys. Res.*, 112, D03307, doi:10.1029/2006JD007350

Nitrogen Trifluoride:

Weiss, R.F., J. Mühle, P.K. Salameh, and C.M. Harth, Nitrogen trifluoride in the global atmosphere, *Geophys. Res. Lett.*, 35, L20821, doi:10.1029/2008GL035913, 2008.