CURRICULUM VITAE

February 1, 2024

RONALD G. PRINN

Education:

University of Auckland, New Zealand;	
B.Sc. in Chemistry and Pure and Applied Mathematics	1967
University of Auckland, New Zealand;	
M.Sc. with first class honors in Chemistry	1968
Massachusetts Institute of Technology;	
Sc.D. in Chemistry	1971

Professional Positions:

Teaching Assistant, MIT Department of Chemistry	1968-1970
NASA Graduate Assistant, MIT Department of Chemistry	1970–71
Assistant Professor, MIT Department of Meteorology	1971–76
Faculty resident, Baker House, MIT	1974–77
Associate Professor, MIT Department of Meteorology and Physical Oceanography	1976–82
Visiting Associate Professor, Caltech, Division of Geological and Planetary Sciences	1981
Professor, MIT Department of Meteorology and Physical Oceanography	1982–83
Professor, MIT Department of Earth, Atmospheric, and Planetary Sciences	1983–1992
Founder & Director, MIT Center for Global Change Science	1990–present
Co-Founder & Co-Director, MIT Joint Program on the Science and Policy of Global Change	1991–present
TEPCO Professor of Atmospheric Science, MIT	1993–present
Head, Department of Earth, Atmospheric and Planetary Sciences, MIT	1998–2003

Honors:

University of New Zealand Junior Scholar	1964, 65, 66
University of New Zealand Fowlds Prize for the most distinguished student in the faculty of science	1967
University of New Zealand Postgraduate Scholar in Science	1968
American Geophysical Union James B. Macelwane Medal for significant contributions to the Geophysical Sciences by a young scientist of outstanding ability	1981
Elected a Fellow of the American Geophysical Union	1981
V.I. Vernadsky Memorial Lecturer, V.I. Vernadsky Institute, USSR Academy of Sciences	1984
Energy Journal Best Paper Award	1997
Elected a Fellow of the American Association for the Advancement of Science	2001
Bose Institute Centenary Lecturer, 100th Anniversary of the Bose Institute, Kolkata, India,	2017

MIT Academic & Service Summary

Professor Prinn currently teaches two subjects in Atmospheric and Climate Sciences at MIT: "Atmospheric Physics and Chemistry" (12.806G, 12.306U), and "Experimental Atmospheric Chemistry" (12.335U/12.835G). In the past he has taught courses in "Global Climate Change: Economics, Science and Policy" (12.848G/12.348U), "Atmospheric Radiation" (12.815G), "Global Change Science", "Physical Meteorology", "Chemistry and Dynamics of Upper Atmospheres", "A guided Tour of the Planets", and "Atmospheric Chemistry and Radiation". He served as a freshman advisor from 1971 to 1976 and as a faculty resident at Baker House from 1974 to 1977.

In 1990 he founded, and since then has directed, the MIT Center for Global Change Science. In 1991 he co-founded (with Henry Jacoby), and since then has co-directed, the MIT Joint Program on the Science and Policy of Global Change. He headed the Department of Earth, Atmospheric and Planetary Sciences from 1998 to 2003.

He was a member of the MIT Environmental Research Council, the Editorial Board of the MIT Faculty Newsletter, the Editorial Board of the MIT Press, and the Executive Committee of the MIT Council on the Global Environment. He is a past member of MIT's J.R. Killian Award Selection Committee, MIT's Committee on Graduate School Policy, and MIT's Committee on Toxic Chemicals. He currently chairs the Henry Kendall Lecture selection committee and the Mario and Luisa Molina Postdoctoral Fellow selection committee, and is a member of the MIT DOE Faculty Engagement Group.

Graduate Advising

Completed Doctoral Students (32): Matthew Alvarado, Robert Boldi, Mary Anne Carroll, Yu-Han Chen, Jason Cohen, Dale Durran, Neil Donahue, Anita Ganesan, Charles Gertler, Amram Golombek, John Graham, Baskhar Gunturu, Dana Hartley, Elke Hodson, Jin Huang, Diane Ivy, Gary Kleiman, Jimmy Gasore, Eunjee Lee, Yuexin Liu, Don Lucas, Natalie Mahowald, Michael McClellan, Laura Meredith, Jay Olaguer, Wenwei Pan, Arnico Panday, Katherine Potter, Stephanie Shaw, Michelle Sprengnether, Donnan Steele and Xue Xiao.

Completed Master's Students (12): Robert D'Entremont, Kevin Gurney, Gary Holian, Chris Jensen, Arthur Katz, Michael Kirkish, Ryan Merkin, Gary Moore, Jay Olaguer, Robert Posey, Debra Weisenstein, Brenda Walker.

Research Summary

Dr. Prinn's principal general research interests involve the chemistry, dynamics and physics of the atmospheres and climates of the Earth and other planets, and the interactions among science, economics and technology that guide sound policy. Dr. Prinn is currently Principal Investigator on a wide range of projects in atmospheric chemistry, biogeochemistry, climate science, and integrated assessment of science and policy regarding climate change and air pollution that are carried out in the Center for Global Change Science and the Joint Program on the Science and Policy of Global Change. Support for these projects has come from several U.S. Federal agencies (DOE, DOT, EPA, FAA, NASA, NSF, NOAA, NREL, EIA, USDA), national and international industrial sponsors (Alstom Power, American Electric Power, BP, Cargill, Caterpillar, Chevron, CONCAWE & EUROPIA, ConocoPhillips, CLP Holdings, Deutsche Asset Management, Dow Chemical, Duke Energy, EPRI, Electricité de France, Eni, Exelon, Exxon Mobil, GDF SUEZ, J-Power, Lockheed Martin, Marathon Oil, Murphy Oil, Nike, Oglethorpe Power, Repsol, RWE Power, Shell International Petroleum, Southern Company, Statoil, Suncor Energy, Suncor, Tokyo Electric Power Company, Total, Toyota Motor North America, Weyerhaeuser Company), the Centro Mario Molina, the Norwegian Ministry of Petroleum and Energy, the Clear Path Foundation and the J. Unger Vetlesen Foundation. The grants or recurring gifts from these various sources to the Center for Global Change Science and the Joint Program on the Science and Policy of Global Change total about $8 million per year over the past 10 years.

Principal Research Accomplishments

* In 1978, Dr. Prinn founded and still leads the Advanced Global Atmospheric Gases Experiment (AGAGE) and its predecessors, in which the rates of increase of now over 50 environmentally harmful trace gases have been measured continuously over the globe at high frequency.

AGAGE includes all the important gases containing Cl and Br involved in ozone depletion (Montreal Protocol) and all the important non-CO_2 gases involved in the greenhouse effect (Kyoto Protocol). AGAGE now involves 13 stations and 12 nations around the world (USA, Japan, China, South Korea, Australia, UK, Switzerland, Norway, Italy, Ireland, Barbados, Samoa) and has produced over 200 peer-reviewed publications that are widely cited in WMO Ozone and IPCC Climate Assessments. In the 1980's and 1990's, he pioneered the application of Bayesian inverse methods and accurate atmospheric circulation models driven by analyzed observed meteorology, to interpret the AGAGE measurements. He and his colleagues have determined the atmospheric lifetimes and emissions of AGAGE gases. These lifetimes enabled calculation of Global Warming Potentials (GWPs) under the Kyoto Protocol, and Ozone Deletion Potentials (ODPs) under the Montreal Protocol. The estimated emissions are used to verify reported emissions by nations under the Kyoto and Montreal Protocols. He has led determination of the concentrations of the atmosphere's major oxidizing agent, the OH free radical, using AGAGE measurements of trichloroethane. The global average OH concentration, first estimated in 1987 ($\sim 10^6$ radicals/cm^3), remains the accepted estimate today. The small inferred long- term OH trend indicates the stability since 1978 of the lifetimes of all the major gases that are removed by OH.

* Dr. Prinn developed with colleagues the first comprehensive global 3-dimensional dynamical-chemical-radiation model of the stratospheric ozone layer.

The model was applied in the 1970's to elucidating the deleterious effects on ozone of the proposed fleet of Boeing 2707 supersonic aircraft (that would fly through the stratosphere). In the 1980s it was applied to study the stratospheric impacts of chlorofluorocarbons.

* From the 1990s onwards Dr. Prinn has developed with colleagues the Integrated Global System Model (IGSM).

This model couples sub-models of: (1) economic, demographic, trade, and technological processes involved in emissions relevant to climate and air pollution by sector and country, (2) dynamics, physics and chemistry of the atmosphere, ocean and climate, (3) bio-geochemistry and bio-geophysics of the land and ocean, and (4) physics of the ocean and land cryospheres. As reported in over 530 peer-reviewed publications, this unique modeling capability has been applied to: (1) investigate complex interactions among the human and natural components of the earth system, (2) develop and apply methods for examining uncertainty in economic and environmental projections, (3) investigate mitigation and adaptation strategies at the global and regional levels, and (4) analysis of the climate, air pollution, human health and ecosystem benefits of policies.

* Dr. Prinn did pioneering studies in the 1970s and 1980s of the chemistry and evolution of planetary atmospheres, and in the 1980s and 1990s of the chemistry and evolution of the gaseous circumsolar disc in which the planets originated.

He proposed the theory of "transport-induced kinetic inhibition" that explains the observed non-equilibrium atmospheric gases containing C, Si, Ge, P, and As in the giant planets, and by inference, the gases containing C, N and O in the circum-solar and circum-stellar proto-discs. He performed pioneering studies of the photochemistry of the observed atmospheric gases and aerosols containing S and Cl on Venus, and P and S on Jupiter, to explain their chemical cycles and their roles in cloud colorations.

* Dr. Prinn has played leadership roles in developing some major national and international scientific research programs.

He was the first Chairman of the Steering Committee of the International Global Atmospheric Chemistry (IGAC) Project from 1988-1995. IGAC quickly became the largest international project in atmospheric chemistry. He was Chairman of the Committee on Earth Sciences of the US-NAS Space Science Board from 1982-1984. The committee's report "A Strategy for Earth Science from Space, Part 2", provided a strong scientific foundation for the later study of the atmosphere and its interactions with the land, oceans and biota from the Earth Observing System.

National & International Advisory Activities

Dr. Prinn has twice given invited testimony to Congress regarding climate change:

Prinn, R.G., Climate Change: State of the Science and Implications for Policy, Invited testimony to the Committee on Science, U.S. House of Representatives, 105th Congress, Countdown to Kyoto (U.S. Government Printing Office), Part I, Vol. 1, pgs. 42–68, 1998.

Prinn, R.G., Climate Change: A Growing Scientific Impetus for Policy, Invited testimony to the Committee on Ways and Means, Hearing on Energy and Tax Policy, U.S. House of Representatives, Record of the 110th Congress, 2007.

Dr. Prinn is a member of the editorial board of the *International Journal of Environment and Pollution*. He has previously served as Editor for atmospheric sciences for *EOS* (AGU), Associate Editor of *Global Biogeochemical Cycles* (AGU), and Associate Editor for the *Journal of Geophysical Research: Atmospheres* (AGU).

He has served or is currently serving on the following scientific advisory committees:

UCAR University Relations Committee	1974–1977
NASA Outer Planetary Probes Science Study Group	1974–1975
DOT/CIAP Panel on the Perturbed Stratosphere	1975
NASA Terrestrial Planets Science Study Group	1976–1977
AGU Planetology Section Nominations Committee	1977–1978
NAS/NRC Committee on Planetary and Lunar Exploration	1977–1981
IUGG/IAMAP International Commission on Planetary Atmospheres and their Evolution	1978–1995
NASA Advisory Council Innovation Subcommittee	1979
NAS/NRC Space Science Board	1981–1984
Chairman, NAS/NRC Committee on Earth Sciences	1982–1984
NASA Steering Committee for the Global Habitability Study	1982
NASA Biogenic Elements Science Study Group	1981–1982
NASA/SSEC Working Group for Terrestrial Planet Atmospheres	1982
UCAR Scientific Programs Evaluation Committee Panel for Review of NCAR Atmospheric Chemistry and Aeronomy Division	1983
NASA University Relations Study Group	1983–1985
American Meteorology Society Committee on Atmospheric Chemistry	1983–1986
NASA Earth System Sciences Committee	1983–1987
NAS/NRC US Committee for an International Geosphere-Biosphere Program	1984–1986
NAS/NRC/SSB Task Group on Earth Sciences	1985–1986
Co-chairman, NSF/NASA/NOAA Global Tropospheric ChemistryProgram Plan Steering Committee	1984–1986
NAS/NRC/COSEPUP Research Briefing Panel on Remote Sensing ofthe Earth	1985
NASA Space and Earth Sciences Computing Center Steering Committee	1986–1987
AGU Committee of Fellows	1986–1988
AGU Committee on Earth as a System	1986–1988
NAS/NRC Committee on Atmospheric Chemistry	1987–1989
NAS/NRC Committee on Mars Sample Return	1987–1989

IUGG/IAMAP International Commission on Atmospheric Chemistry and Global Pollution	1987–1995
Inaugural Chairman, IGBP/IAMAP International Global Atmospheric Chemistry (IGAC) Project Steering Committee	1988–1995
NAS/NRC Committee on Cooperation with the USSR in Planetary Science	1989
ICSU/IGBP Special Committee	1989–1990
NAS/NRC US National Committee for SCOPE	1990–1992
NASA Space Science and Applications Advisory Committee	1990–1992
ICSU/IGBP Scientific Committee	1990–1995
Network for Detection of Atmospheric Composition Change, Int'l Steering Committee	1990–present
Chair Elect/Chair/Retiring Chair, AAAS Atmospheric and Hydrospheric Sciences	1998–2001
AAAS Council	2000-2001

AAAS	American Association for the Advancement of Science	**NAS**	National Academy of Sciences
AGU	American Geophysical Union	**NASA**	National Aeronautics and Space Administration
IAMAP	International Association of Meteorology and Atmospheric Physics	**NRC**	National Research Council
ICSU	International Council of Scientific Unions	**SCOPE**	Scientific Committee on Problems of the Environment
IGBP	International Geosphere-Biosphere Programme	**UCAR**	University Corporation for Atmospheric Research
IPCC	Intergovernmental Panel on Climate Change	**UNEP**	United Nations Environment Program
IUGG	International Union of Geodesy and Geophysics	**WMO**	World Meteorological Organization
JPL	Jet Propulsion Laboratory	**WCRP**	World Climate Research Programme

Workshops and Assessments

Dr. Prinn has also participated in the following studies/workshops/assessments that produced published proceedings:

1975	NASA Workshop	*The Stratosphere, 1975–1980*
1975	DOT/CIAP Workshop	*The Stratosphere Perturbed by Propulsion Effluents*
1977	NASA/JPL Workshop	*The Dynamics of Earth and Planetary Atmospheres*
1978	NAS/SSB Workshop	*Comets, Asteroids, and Dust*
1979	NASA Workshop	*The Stratosphere: Present and Future*
1980	NASA Workshop	*Vibrational-Rotational Spectroscopy for Planetary Atmospheres*
1982	NASA Workshop	*Global Habitability*
1983	NAS/NRC Workshop	*International Geosphere-Biosphere Program*
1987	Dahlem Konferenzen	*The Changing Atmosphere*
1988	UCAR/OIES Workshop	*Trace Gases and the Biosphere*
1990	UCAR/OIES Workshop	*Earth System Modeling*
1990	WCRP Workshop	*Global Tracer Transport Modeling*
1992	Chair, NATO Advanced Research Workshop	*Biogeochemical Ocean-Atmosphere Transfers*
1993	Chair, First IGAC Scientific Conference	*Atmospheric Biospheric Chemistry*
1994	UCAR/OIES Global Change Institute	*Integrated Assessment Modeling*
1998	Lead Author, WMO/UNEP	*Scientific Assessment of Ozone Layer Depletion: 1998*
2001	IGBP Workshop	*Nonlinear Responses to Global Environmental Change*
2003	ICSU/SCOPE/IGBP/WCRP	*Global Carbon Project*
2006	Lead Author, IPCC	*Climate Change: 2007: The Science Basis*
2006	Co-author, WMO/UNEP	*Scientific Assessment of Ozone Depletion: 2006*
2010	Co-author WMO/UNEP	*Scientific Assessment of Ozone Depletion: 2010*

1. PUBLICATIONS

Lewis, J.S. and **R.G. Prinn**, Jupiter's clouds: structure and composition, *Science*, **169**, 472–473, 1970.

Prinn, R.G., UV radiative transfer and photolysis in Jupiter's atmosphere, *Icarus*, **13**, 424–436, 1970.

Lewis, J.S. and **R.G. Prinn**, Chemistry and photochemistry of the atmosphere of Jupiter, In *Theory and Experiment in Exobiology*, ed. A.A. Schwartz, Wolters-Noordhoff, Groningen, **1**, 123–142, 1971.

Prinn, R.G., Photochemistry of HCl and other minor constituents in the atmosphere of Venus, *J. Atmos. Sci.*, **28**, 1058–1068, 1971.

Prinn, R.G., Venus atmosphere: structure and stability of the ClOO radical, *J. Atmos. Sci.*, **29**, 1004–1007, 1972.

Prinn, R.G., The atmospheres of Uranus and Neptune: a review, *Planetary and Space Science*, **21**, 1601–1603, 1973.

Prinn, R.G., The upper atmosphere of Venus: a review, in *Physics and Chemistry of Upper Atmospheres,* ed. B.M. McCormac, D. Reidel, Dordrecht, 335–344, 1973.

Prinn, R.G., and J.S. Lewis**,** Uranus atmosphere: structure and composition, *Astrophys. J.*, **179**, 333–342, 1973. Pilcher, C.B., **R.G. Prinn**, and T.B. McCord, Spectroscopy of Jupiter: 3200–11,200, *J. Atmos. Sci*., **30**, 302– 307, 1973.

Lewis, J.S. and **R.G. Prinn**, Titan revisited. *Comments Astrophys. and Space Phys.*, **5**, 1–7, 1973.

Prinn, R.G., Venus: Composition and structure of the visible clouds, *Science*, **182**, 1132–1135, 1973.

Prinn, R.G., Venus: Vertical transport rates in the visible atmosphere, *J. Atmos. Sci.*, **31**, 1691–1697, 1974. Cunnold, D.M., F.N. Alyea, N.A. Phillips and **R.G. Prinn**, Preliminary results of the MIT photochemical- dynamical ozone model, in *Proceedings of the Third Conference on the Climatic Impact Assessment Program*, eds. A. Broderick and T. Hard, Report No. DOT-TSC-OST 74-15, Nat. Tech. Inf. Service, Springfield, Virginia 22151, 403–421, 1974.

Cunnold, D.M., F.N. Alyea, N. Phillips and **R.G. Prinn**, A three-dimensional dynamical-chemical model of atmospheric ozone, *J. Atmos. Sci.*, **32**, 170–194, 1975.

Alyea, F.N., D.M. Cunnold and **R.G. Prinn**, Stratospheric ozone destruction by aircraft-induced nitrogen oxides, *Science*, **188**, 117–121, 1975.

Prinn, R.G., F.N. Alyea, and D.M. Cunnold, Stratospheric distributions of odd nitrogen and odd hydrogen in a two-dimensional model, *J. Geophys. Res.*, **80**, 4997–5004, 1975.

Prinn, R.G., Venus: Chemical and dynamical processes in the stratosphere and mesosphere, *J. Atmos. Sci.*, **32**, 1237–1247, 1975.

Prinn, R.G., and J.S. Lewis, Phosphine on Jupiter and implications for the Great Red Spot, *Science*, **190**, 274–276, 1975.

Prinn, R.G., and T. Owen, Chemistry and spectroscopy of the Jovian atmosphere, in *Jupiter*, ed. T. Gehrels, Univ. of Arizona Press, 319–371, 1976.

Prinn, R.G., F.N. Alyea, and D.M. Cunnold, The impact of stratospheric variability on measurement programs for minor constituents, *Bull. Amer. Met. Soc.*, **57**, 686–694, 1976.

Cunnold, D.M., F.N. Alyea and **R.G. Prinn**, Relative effects on atmospheric ozone of latitude and altitude of supersonic flight, *Amer. Inst. Aero. and Astro. Journal*, **15**, 337–345, 1977.

Huguenin, R.L., **R.G. Prinn**, and M. Maderrazo, Mars: photodesorption from mineral surfaces and its effects on atmospheric stability, *Icarus*, **32**, 270–298, 1977.

Prinn, R.G., and S.S. Barshay, Carbon monoxide on Jupiter and implications for atmospheric convection, *Science*, **198**, 1031–1034, 1977.

Prinn, R.G., On the radiative damping of atmospheric waves, *J. Atmos. Sci.*, **34**, 1386–1401, 1977.

Prinn, R.G., F.N. Alyea, and D.M. Cunnold, Photochemistry and dynamics of the ozone layer, *Ann. Rev. Earth Planet. Sci.*, **6**, 43–74, 1978.

Alyea, F.N., D.M. Cunnold, and **R.G. Prinn**, Meteorological constraints on tropospheric halocarbon and nitrous oxide destructions by siliceous land surfaces, *Atmos. Environ.*, **12**, 1009–1011, 1978.

Cunnold, D.M., F.N. Alyea, and **R.G. Prinn**, A methodology for determining the atmospheric lifetime of fluorocarbons, *J. Geophys. Res.*, **83**, 5493–5500, 1978.

Prinn, R.G., Venus: chemistry of the lower atmosphere prior to the Pioneer Venus Mission, *Geophys. Res. Lett.*, **5**, 973–976, 1978.

Counselman, C.C., S.A. Gourevitch, R.W. King, G.H. Pettengill, **R.G. Prinn**, I.I. Shapiro, R.B. Miller, J.R. Smith, R. Ramos, and P. Leibrecht, Wind velocities on Venus: vector determination by radio interferometry, *Science*, **203**, 805–806, 1979.

Counselman, C.C., S.A. Gourevitch, R.W. King, G.B. Loriot, and **R.G. Prinn**, Venus winds are zonal and retrograde below the clouds, *Science*, **205**, 85–87, 1979.

Prinn, R.G., On the possible roles of gaseous sulfur and sulfanes in the atmosphere of Venus, *Geophys. Res. Lett.*, **6**, 807–810, 1979.

Cunnold, D.M., F.N. Alyea, and **R.G. Prinn**, Measurement of CCl_3F and CCl_4 at Harwell over the period January 1975–November 1977, *Atmos. Environ.*, **14**, 617–621, 1980.

Cunnold, D.M., F.N. Alyea, and **R.G. Prinn**, Preliminary calculations concerning the maintenance of the zonal mean ozone distribution in the Northern Hemisphere, *Pure and Applied Geophys.*, **118**, 329–354, 1980.

Lewis, J.S. and **R.G. Prinn**, Kinetic inhibition of CO and N_2 reduction in the solar nebula, *Astrophys. J.*, **238**, 357– 364, 1980.

Prinn, R.G., Atmospheric chemistry of the planet Venus, *Chemistry International (IUPAC Bulletin)*, **1**, 20– 25, 1980.

Prinn, R.G. and E.P. Olaguer, Nitrogen on Jupiter: a deep atmospheric source, *J. Geophys. Res.*, **86**, 9895–9899, 1981.

Prinn, R.G. and B. Fegley, Kinetic inhibition of CO and N_2 reduction in circumplanetary nebulae: implications for satellite composition, *Astrophys. J.*, **249**, 308–317, 1981.

Prinn, R.G., Origin and evolution of planetary atmospheres: an introduction to the problem, *Planet, Space Sci.*, **30**, 741–753, 1982.

Lewis, J.S., G.H. Watkins, H. Hartman, and **R.G. Prinn**, Chemical consequences of major impact events on Earth, In *Geological Society of America Special Paper No. 190*, ed. L. Silver and P. Schultz, pp. 215–221,1982.

Prinn, R.G., Composition of Jupiter, In *Vibrational-Rotational Spectroscopy for Planetary Atmospheres,* eds. J. Mumma, K. Fox, J. Hornstein; NASA Conference Publication 2223, Washington, DC, Vol. 1, pp. 363–385, 1982.

von Zahn, U., S. Kumar, H. Neimann and **R.G. Prinn**, Composition of the Venus atmosphere, In *Venus*, eds. D.M. Hunten, L. Colin, T.M. Donahue, and V.I. Moroz, Univ. of Arizona Press, 299–430, 1983.

Prinn, R.G., P.G. Simmonds, R.A. Rasmussen, R.D. Rosen, F.N. Alyea, C.A. Cardelino, A.J. Crawford, D.M. Cunnold, P.J. Fraser, and J.E. Lovelock, The Atmospheric Lifetime Experiment, I: introduction, instrumentation and overview, *J. Geophys. Res.*, **88**, 8353–8367, 1983a.

Cunnold, D.M., **R.G. Prinn**, R. Rasmussen, P.G. Simmonds, F.N. Alyea, C. Cardelino, A. Crawford, P.J. Fraser, and R. Rosen, The Atmospheric Lifetime Experiment, III: lifetime methodology and application to three years of $CFCl_3$data, *J. Geophys. Res.*, **88**, 8379–8400, 1983.

Cunnold, D.M., **R.G. Prinn**, R. Rasmussen, P.G. Simmonds, F.N. Alyea, C. Cardelino, and A. Crawford The Atmospheric Lifetime Experiment, IV: results for CF_2Cl_2 based on three years of data, J. *Geophys. Res.*, **88**, 8401–8414, 1983.

Prinn, R.G., R.A. Rasmussen, P.G. Simmonds, F.N. Alyea, D.M. Cunnold, B.C. Lane, C.A. Cardelino, and A.J. Crawford, The Atmospheric Lifetime Experiment, 5: results for CH_3CCl_3 based on three years of data, *J. Geophys. Res.*, **88**, 8415–8426, 1983b.

Simmonds, P.G., F.N. Alyea, C.A. Cardelino, A.J. Crawford, D.M. Cunnold, B.C. Lane, J.E. Lovelock, **R.G. Prinn**, and R.A. Rasmussen, The Atmospheric Lifetime Experiment, 6: results for carbon tetrachloride based on three years data, *J. Geophys. Res.*, **88**, 8427–8441, 1983.

Prinn, R.G., H.P. Larson, J.J. Caldwell, and D. Gautier, Composition and chemistry of Saturn's atmosphere, In *Saturn*, ed. T. Gehrels, Univ. of Arizona Press, 88–149, 1984.

Lewis, J., and **R.G. Prinn**, *Planets and their Atmospheres: Origin and Evolution*, Academic Press, New York, 470 pgs, 1984.

Prinn, R.G., The photochemistry of the atmosphere of Venus, in *The Photochemistry of Atmospheres*, ed. J. Levine, Academic Press, New York, 281–336, 1985.

Prinn, R.G., The sulfur cycle and clouds of Venus, In *Recent Advances in Planetary Meteorology*, ed. G.E. Hunt, Cambridge University Press, England, 1–15, 1985.

Prinn, R.G., The volcanoes and clouds of Venus, *Scientific American*, **252**, 46–53, 1985.

Prinn, R.G., On the feasibility of quantitative analysis of atmospheric OH by titration, *Geophys. Res. Lett.*, **12**, 597–600, 1985.

Fegley, B. and **R.G. Prinn**, Predicted chemistry of the deep atmosphere of Uranus before the Voyager 2 encounter,
Nature, **318**, 48–50, 1985.

Fegley, B. and **R.G. Prinn**, Equilibrium and non-equilibrium chemistry of Saturn's atmosphere: implications for the observability of PH_3, N_2, CO, and GeH_4, *Astrophys. J.*, **299**, 1067–1078, 1985.

Golombek, A. and **R.G. Prinn**, A global three-dimensional model of the circulation and chemistry of $CFCl_3$, CF_2Cl_2, CH_3CCl_3, CCl_4, and N_2O, *J. Geophys. Res.*, **91**, 3985–4001, 1986.

Fegley, B., **R.G. Prinn**, H. Hartman, and H. Watkins Chemical effects of large impacts on the Earth's primitive atmosphere, *Nature*, **319**, 305–307, 1986.

Carroll, M.A., L.E. Heidt, R.J. Cicerone, and **R.G. Prinn**, OCS, H_2S, and CS_2 fluxes from a salt water marsh, *J. Atmos. Chem.*, **4**, 375–395, 1986.

Cunnold, D.M., **R.G. Prinn**, R.A. Rasmussen, P.G. Simmonds, F.N. Alyea, C.A. Cardelino, A.J. Crawford, P.J. Fraser, and R.D. Rosen, Atmospheric lifetime and annual release estimates for $CFCl_3$ and CF_2Cl_2 from 5 years of ALE data, *J. Geophys. Res.*, **91**, 10797–10817, 1986.

Fegley, B. and **R.G. Prinn**, Chemical models of the deep atmosphere of Uranus, *Astrophys. J.*, **307**, 852–865, 1986.

Prinn, R.G., Chemistry and chemical evolution of Venus, Saturn, and Titan based on recent spacecraft data, The 25th Vernadsky Memorial Lecture, *Akademia Nauk USSR*, **35526**, 1–27, 1986.

Prinn, R.G. and B. Fegley, The atmospheres of Venus, Earth, and Mars: a critical comparison, *Annual Rev. Earth Planet. Sci.*, **15**, 171–212, 1987. **Prinn, R.G**. and B. Fegley, Bolide impacts, acid rain, and biospheric traumas at the Cretaceous-Tertiary boundary, *Earth Planet. Sci. Lett.*, **83**, 1–15, 1987.

Prinn, R.G., D.M. Cunnold, R. Rasmussen, P.G. Simmonds, F.N. Alyea, A. Crawford, P.J. Fraser, and R. Rosen, Atmospheric trends in methylchloroform and the global average for the hydroxyl radical, *Science*, **238**, 945–950, 1987.

Prinn, R.G., Toward an improved global network for determination of tropospheric ozone climatology and trends,
J. Atmos. Chem., **6**, 281–298, 1988.

Prinn, R.G., How have the atmospheric concentrations of the halocarbons changed? in *The Changing Atmosphere,* eds. F.S. Rowland and I.S.A. Isaksen, J. Wiley & Sons, Chichester, pp. 33–48, 1988.

Fegley, B. and **R.G. Prinn**, The predicted abundances of deuterium-bearing gases in the atmospheres of Jupiter and Saturn, *Astrophys. J.*, **326**, 490–508, 1988.

Fegley, B. and **R.G. Prinn**, Chemical constraints on the water and total oxygen abundances in the deep atmosphere of Jupiter, *Astrophys. J.*, **324**, 621–625, 1988.

Simmonds, P.G., D.M. Cunnold, F.N. Alyea, C.A. Cardelino, A.J. Crawford, **R.G. Prinn**, P.J. Fraser, R.A. Rasmussen, and R.D. Rosen, Carbon tetrachloride lifetime and emissions determined from daily global measurements during 1978–1985, *J. Atmos. Chem.*, **7**, 35–58, 1988.

Prinn, R.G. and B. Fegley, Solar nebula chemistry: origin of planetary, satellite, and cometary volatiles, in *Origin and Evolution of Planetary and Satellite Atmospheres*, eds. S.K. Atreya, J.B. Pollack, and M.S. Matthews, Univ. of Arizona Press, Tucson, 78–136, 1989.

Golombek, A., and **R.G. Prinn**, Global three-dimensional model calculations of the budgets and present-day atmospheric lifetimes of $CF_2ClCFCl_2$ (CFC-113) and $CHClF_2$ (CFC-22), *Geophys. Res. Lett.*, **16**, 1153–1156, 1989.

Fegley, B. and **R.G. Prinn**, Estimation of the rate of volcanism on Venus from reaction rate measurements, *Nature*, **337**, 55–58, 1989.

Fegley, B., and **R.G. Prinn**, Solar nebula chemistry: implications for volatiles in the solar system, in *The Formation and Evolution of Planetary Systems*, eds. H.A. Weaver and L. Danly, Cambridge Univ. Press, Cambridge, 171–211, 1989.

Prinn, R.G., On neglect of non-linear momentum terms in solar nebula accretion disk models, *Astrophys. J.*,
348, 725–729, 1990.

Prinn, R.G., and A. Golombek, Global atmospheric chemistry of CFC-123, *Nature*, **344**, 47–49, 1990.

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.

Donahue, N. and **R.G. Prinn**, Non-methane hydrocarbon chemistry in the remote marine boundary layer, *J. Geophys. Res.,* **95**, 18387–18411, 1990.

Fegley, B., D. Gautier, T. Owen, and **R.G. Prinn**, Spectroscopy and chemistry of the atmosphere of Uranus, in *Uranus*, eds. J. Bergstralh, E. Miner, and M.S. Matthews, Univ. of Arizona Press, 147–203, 1991.

Prinn, R.G., Global atmospheric chemistry and global pollution, in *Energy and the Environment in the 21st Century*, ed. J. Tester, D. Woods, and N. Ferrari, MIT Press, Cambridge, 27–39, 1991.

Prinn, R.G., Biomass burning studies and the International Global Atmospheric Chemistry (IGAC) Project, in *Global Biomass Burning*, ed. J. Levine, MIT Press, Cambridge, 22–28, 1991.

Cunnold, D.M. and **R.G. Prinn**, Comment on "Tropospheric OH in a three-dimensional chemical tracer model: An assessment based on observations of CH_3CCl_3" by C. Spivakovsky *et al., J. Geophys. Res*., **96**, 17391–17393, 1991.

Hartley, D.E. and **R.G. Prinn**, A critical comparison between tropical ALE/GAGE methyl chloroform measurements and the three-dimensional model of Spivakovsky and coworkers, *J. Geophys. Res.*, **96**, 17383–17387, 1991.

Pitari, G., S. Palermi, G. Visconti, and **R.G. Prinn**, Ozone response to a CO_2 doubling: Results from a stratospheric circulation model with heterogeneous chemistry, *J. Geophys. Res.*, **97**, 5953–5962, 1992.

Prinn, **R.G.** and Hartley, D.E., Atmosphere, ocean, and land: critical gaps in earth system models. In *Report of the 1990 Global Change Institute*, ed. D. Ojima, OIES/UCAR, Boulder, pp. 9–38, 1992.

Prinn, R.G., Cyclic closure of biogeochemical cycles: Vernadsky Loops. In *Report of the 1988 Global Change Institute*, ed. B. Moore, OIES/UCAR, Boulder, pp. 79–85, 1992.

Prinn, R.G., D.M. Cunnold, P.G. Simmonds, F.N. Alyea, R. Boldi, A. Crawford, P.J. Fraser, D. Gutzler, D.E. Hartley, R. Rosen, and R. Rasmussen, Global average concentration and trend for hydroxyl radicals deduced from ALE/GAGE trichloroethane (methyl chloroform) data for 1978–1990, *J. Geophys. Res.*, **97**, 2445– 2461, 1992.

Prinn, R.G., Earth system science, in *The Use of EOS for Studies of Atmospheric Physics*, eds. J. Gille and G. Visconti, Italian Physical Society, North-Holland Elsevier, Amsterdam, pp. 3–11, 1992.

Brasseur, G.P. and **R.G. Prinn**, Biogenic and anthropogenic trace gases in the atmosphere, in *The Use of EOS for Studies of Atmospheric Physics*, eds. J. Gille and G. Visconti, Italian Physical Society, North-Holland Elsevier, Amsterdam, 45–64, 1992.

Prinn, R.G., Tropospheric chemistry models, in *The Use of EOS for Studies of Atmospheric Physics*, eds. J. Gille and G. Visconti, Italian Physical Society, North-Holland Elsevier, Amsterdam, pp. 65–76,1992.

Donahue, N.M. and **R.G. Prinn**, *In-situ* nonmethane hydrocarbon measurements on SAGA 3, *J. Geophys. Res.*,**98**, 16915–16932, 1993.

Golombek, A., and **R.G. Prinn**, A global three-dimensional model of the stratospheric sulfuric acid layer, *J. Atmos. Chem*., **16**, 179–199, 1993.

Prinn, R.G., Chemistry and evolution of gaseous circumstellar disks, in *Protostars and Planets III*, eds. E.H. Levy and J.I. Lunine, Univ. of Arizona Press, Tucson and London, pp. 1005–1028, 1993.

Hartley, D.E. and **R.G. Prinn**, Feasibility of determining surface emissions of trace gases using an inverse method in a three-dimensional chemical transport model, *J. Geophys. Res.*, **98**, 5183–5197, 1993.

Prinn, R.G. P. Liss, P. Buat-Menard, Biogeochemical ocean-atmosphere transfers, *Global Biogeochem. Cyc.*, **7**, 245–246, 1993.

Cunnold, D.M., P.J. Fraser, R.F. Weiss, **R.G. Prinn**, P.G. Simmonds, B.R. Miller, F.N. Alyea, and A.J. Crawford, Global trends and annual releases of CCl_3F and CCl_2F_2 estimated from ALE/GAGE and other measurements from July 1978 to June 1991, *J. Geophys. Res.*, **99**, 1107–1126, 1994.

Hartley, D.E., D.L. Williamson, P.J. Rasch, and **R.G. Prinn**, Examination of tracer transport in the NCAR CCM2 by comparison of $CFCl_3$simulations with ALE/GAGE observations. J. *Geophys. Res.*, **99**, 12885–12896, 1994.

Prinn, R.G., ed., *Global Atmospheric-Biospheric Chemistry*, Plenum Press, New York, 261 pgs., 1994.

Prinn, R.G., The interactive atmosphere: Global atmospheric-biospheric chemistry, *Ambio*, **23**, 50–61, 1994.

Prinn, R.G., Global atmospheric-biospheric chemistry, in *Global Atmospheric-Biospheric Chemistry*, Plenum Press, ed. R.G. Prinn, New York, pp. 1–18, 1994.

Prinn, R.G., and D.E. Hartley, Inverse methods in atmospheric chemistry, in *Progress and Problems in Atmospheric Chemistry*, ed. J. Barker, World Sci. Pub., Singapore, pp. 172–197, 1995.

Prinn, R.G., R.F. Weiss, B.R. Miller, J. Huang, F.N. Alyea, D.M. Cunnold, P.J. Fraser, D.E. Hartley, and P.G. Simmonds, Atmospheric trends and lifetime of CH_3CCl_3 and global OH concentrations, *Science*, **269**, 187–192, 1995.

Mahowald, N.M., P.J. Rasch, and **R.G. Prinn**, Cumulus parameterizations in chemical transport models, *J. Geophys. Res.*, **100**, 26173–26189, 1995.

Prinn, R.G., Problems and Uncertainties. In *Climate Change and Rice*, eds. S. Peng, K. Ingram, H.-U. Neue, and L. Ziska, Springer-Verlag, New York, pgs. 3–7, 1995.

Fraser, P.J., D.M. Cunnold, F.N. Alyea, R.F. Weiss, **R.G. Prinn**, P.G. Simmonds, B.R. 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**, 12585–12599, 1996.

Jacoby, H.D. and **R.G. Prinn**, Über die Unsicherheit in der politischen Analyse von Klimaänderungen. *Spektrum der Wissenschaft*, Dossier **5**, pgs. 34–42, 1996.

Hartley, D.E., T. Kindler, D.M. Cunnold, and **R.G. Prinn**, Evaluating chemical transport models: Comparisonof different CFC-11 emission scenarios, *J. Geophys. Res.*, **101**, 14381–14385, 1996.

Haas-Laursen, D.E., D.E. Hartley, and **R.G. Prinn**, Optimizing an inverse method to deduce time varying emissions of trace gases, *J. Geophys. Res.*, **101**, 22823–22831, 1996.

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 Porter, GAGE/AGAGE measurements indicating reductions in global emissions of CCl_3F and CCl_2F_2 in 1992–1994, *J. Geophys. Res*., **102**, 1259–1269, 1997.

Jacoby, H.D., R.S. Eckaus, A.D. Ellerman, **R.G. Prinn**, D.M. Reiner, and Z.L. Yang, CO_2 emissions limits: economic adjustments and the distribution of burdens, *The Energy Journal*, **18**, 31–58, 1997.

Mahowald, N.M., **R.G. Prinn**, and P. Rasch, Deducing CCl_3F emissions using an inverse method and chemical transport models with assimilated winds, *J. Geophys. Res.*, **102**, 28153–28168, 1997.

Mahowald, N.M., P.J. Rasch, B.E. Eaton, S. Whittlestone, and **R.G. Prinn**, Transport of ^{222}Radon to the remote troposphere using MATCH and assimilated winds from ECMWF and NCEP/NCAR, *J. Geophys. Res*., **102**, 28139–28152, 1997.

Tatang, M.A., W. Pan, **R.G. Prinn**, and G.J. McRae, An efficient method for parametric uncertainty analysis of numerical geophysical models, *J. Geophys. Res.*, **102**, 21925–21932, 1997.

Pan, W., M.A. Tatang, G.J. McRae, and **R.G. Prinn**, Uncertainty analysis of *direct* radiative forcing by anthropogenic sulfate aerosols, *J. Geophys. Res.*, **102**, 21915–21924, 1997.

Mulquiney, J.E., J.A. Taylor, A.J. Jakeman, J.P. Norton, and **R.G. Prinn**, A new inverse method for trace gas flux estimation: 2. Application to tropospheric $CFCl_3$ fluxes, *J. Geophys. Res*., **103**, 1429–1442, 1998.

Calbó, J., W. Pan, M. Webster, **R.G. Prinn**, and G.J. McRae, Parameterization of urban sub-grid scale processes in global atmospheric chemistry models, *J. Geophys. Res.*, **103**, 3437–3451, 1998.

Wang, C., **R.G. Prinn**, and A.P. Sokolov, A global interactive chemistry and climate model: Formulation and testing, *J. Geophys. Res.*, **103**, 3399–3417, 1998.

Pan, W., M.A. Tatang, G.J. McRae, and **R.G. Prinn**, Uncertainty analysis of *indirect* radiative forcing by anthropogenic sulfate aerosols, *J. Geophys. Res.*, **103**, 3815–3823, 1998.

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 emission estimates of $CCl_4$from *in-situ* background observations from July 1978 to June 1996, *J. Geophys. Res.*, **103**, 16017–16027, 1998.

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 concentration, *J. Geophys. Res.*, **103**, 13237–13248, 1998.

Simmonds, P.G., S. O'Doherty, J. Huang, **R.G. Prinn,** R.G. Derwent, D. Ryall, G. Nickless, and D.M. Cunnold, Calculated trends and the atmospheric abundance of 1,1,1,2-tetrafluoroethane, 1,1-dichloro-1-fluorethane, and 1-chloro-1,1-difluoroethane using automated *in-situ* gas chromatography mass spectrometry measurements recorded at Mace Head, Ireland, from October 1994 to March 1997, *J. Geophys. Res*., **103**, 16029–16037, 1998.

Xiao, X., J.M. Melillo, D.W. Kicklighter, A.D. McGuire, **R.G. Prinn,** C. Wang, P.H. Stone, and A.P. Sokolov, Transient climate change and net ecosystem production of the terrestrial biosphere, *Global Biogeochem. Cyc.*, **12**, 345–360, 1998.

Wang, C. and **R.G. Prinn**, Impact of the horizontal wind profile on the convective transport of chemical species, *J. Geophys. Res*., **103**, 22063–22071, 1998.

Jacoby, H.D., **R.G. Prinn**, and R.L. Schmalensee, Kyoto's unfinished business, *Foreign Affairs*, **77**, 54–66, 1998.

Bai, J., M. Wang, J. Graham, **R.G. Prinn** and Z. Huang, Primary study on the concentrations of nonmethane hydrocarbons emitted from the forest, *Scientia Atmospherica Sinica,* **22**, 247-251, 1998.

Sokolov, A., C. Wang, G. Holian, P. Stone, and **R.G. Prinn**, Uncertainty in the oceanic heat and carbon uptake and its impact on climate projections, *Geophys. Res. Lett*., **25**, 3603–3606, 1998.

Wang, C. and **R.G. Prinn**, Impact of emissions, chemistry, and climate on atmospheric carbon monoxide: 100- year predictions from a global chemistry-climate model, *Chemosphere-Global Change Science*, **1**, 73–82, 1999.

Prinn, R.G., H.D. Jacoby, A.P. Sokolov, C. Wang, X. Xiao, Z.L. Yang, R.S. Eckaus, P.H. Stone, A.D. Ellerman, J.M. Melillo, J. Fitzmaurice, D.W. Kicklighter, G.L. Holian, and Y. Liu, Integrated Global System Model for climate policy assessment: Feedbacks and sensitivity studies, *Climatic Change*, **41**: 469–546, 1999.

Harnisch, J. and **R.G. Prinn**, Sulfur hexafluoride emissions, *Environ. Sci. Tech*., **4**, 56A, 1999.

Prinn, R.G., and R. Zander, with 30 other authors, Long-lived ozone-related compounds, in *Scientific Assessment of Ozone Depletion: 1998*, UNEP/WMO, Geneva, Chapter 1, pgs 1.1–1.54, 1999.

Pszenny, A., **R.G. Prinn**, G. Kleiman, X. Shi, and T.S. Bates, Nonmethane hydrocarbons in surface waters, their sea-air fluxes and impact on OH in the marine boundary layer during the First Aerosol Characterization Experiment (ACE-1), *J. Geophys. Res*., **104**, 21785–21801, 1999.

Reilly, J., **R.G. Prinn**, J. Harnisch, J. Fitzmaurice, H.D. Jacoby, D. Kicklighter, J. Melillo, P.H. Stone, A.P. Sokolov, and C. Wang, Multi-gas assessment of the Kyoto Protocol. *Nature*, **401**, 549–555, 1999.

Wang, C. and **R.G. Prinn**, Interactive chemistry and climate models in global change studies, *Recent Developments in Geophysics*, **2**, 113-123, 1999.

Bai, J., M. Wang, J. Graham, **R.G. Prinn**, G. Kong, and Z. Huang, The analysis for the variation characteristics of surface ozone and NO_x in Dinghushan station, *Acta Scientiae Circumstantiae*, **19**, 262-265, 1999.

Prinn, R.G., Measurement equation for trace chemicals in fluids and solution of its inverse, in *Inverse Methods in Global Biogeochemical Cycles*, ed. P. Kasibhatla *et al*., *Geophysical Monographs*, **114**, American Geophysical Union, pgs. 3–18, 2000.

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.*, **115**, 17751-17792, 2000.

Kasibhatla, P., M. Heimann, P. Rayner, N. Mahowald, **R.G. Prinn,** and D.E. Hartley, eds., *Inverse Methods in Global Biogeochemical Cycles, Geophysical Monographs,* **114,** American Geophysical Union, 324 pgs., 2000.

Mayer, M., C. Wang, M. Webster, and **R.G. Prinn**, Linking local air pollution to global chemistry and climate*, J. Geophys. Res.*, **105**, 22869-22896, 2000.

Wang C. and **R.G. Prinn**, On the roles of deep convective clouds in tropospheric chemistry, *J. Geophys. Res*.,**105**, 22269-22297, 2000.

Bai, J., M. Wang, J. Graham, **R.G. Prinn**, Z. Huang and G. Kong, The study of the relationships of surface ozone, NO_x and solar visible radiation in Dinghushan station, *Acta Scientiae Circumstantiae*, **20**, 173-178, 2000.

Kleiman, G. and **R.G. Prinn**, Measurement and deduction of emissions of trichloroethene, tetrachloroethene and trichloromethane (chloroform) in the Northeastern U.S. and Southeastern Canada, *J. Geophys. Res.*, **105**, 28875-28893, 2000.

Prinn, R.G. and J. Huang, Comment on "Global OH trend inferred from methylchloroform measurements" by M. Krol *et al*., *J. Geophys. Res*., **106**, 23151-23158, 2001.

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 substantial variations of atmospheric hydroxyl radicals in the past two decades, *Science*, **292**, 1882-1888, 2001. *Correction, Science,* **293**, 1054, 2001.

O'Doherty, S., P. Simmonds, D. Cunnold, R.H.J. Wang, G.A. Sturrock, P.J. Fraser, D. Ryall, R.G. Derwent, 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**, 20429-20444, 2001.

Prinn, R.G., Climate Change on Venus, *Nature,* **412**, 36-37, 2001.

Reilly, J., P. Stone, C. Forest, M. Webster, H. Jacoby and **R.G. Prinn**, Uncertainty and Climate Change Assessments, *Science*, **293**, 430-433, 2001.

Lucas, D.D., and **R.G. Prinn**, Mechanistic Studies of dimethyl sulfide oxidation products using an observationally constrained model, *J. Geophys. Res.*, **107,** D14, doi:10.1029/2001JD000843, 2002.

Cunnold, D. M., L.P. Steele, P.J. Fraser, P.G. Simmonds, **R.G. Prinn,** R.F Weiss, L.W. Porter, R.L. Langenfelds, P.B. Krummel, 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**, D14, doi:10.1029/2001JD001226, 2002.

Huang, J. and **R.G. Prinn,** Critical evaluation of emissions for potential new gases for OH estimation, *J. Geophys.Res. – Atmos.,***107**, D24, doi: 10.1029/2002JD002394, 2002.

Shaw, S.L., S.W. Chisholm and **R.G. Prinn**, Isoprene production by Prochlorococcus, a marine cyanobacterium, and other phytoplankton, *Marine Chemistry*, **80**, 227-245, 2003.

Reilly, J.M., H.D. Jacoby and **R.G. Prinn**, Multi-gas contributors to global climate change, *Pew Center on Global Climate Change, Arlington, VA, 48 pgs.,* 2003.

Webster, M., C. Forest, J. Reilly, M. Babiker, D. Kicklighter, M. Mayer, **R.G. Prinn**, M. Sarofim, A. Sokolov, P. Stone and C. Wang, Uncertainty Analysis of Climate Change and Policy Response, *Climatic Change*, **61**, 295-320, 2003.

Prinn, R.G., The Cleansing Capacity of the Atmosphere, *Ann. Rev., Environ. and Resources*, **28**, 29-57, 2003.

Prinn, R.G., Ozone, hydroxyl radical and oxidative capacity, in *Treatise on Geochemistry*, eds. K. Turekian and H. Holland, Pergamon Press, Vol. 4, pgs. 1-19, 2003.

Brasseur, G.P., **R.G. Prinn** and A.A.P. Pszenny, eds., *Atmospheric Chemistry in a Changing World,* Springer, New York, 300 pgs., 2003.

Lucas, D. and **R.G. Prinn**, Tropospheric distributions of sulfuric acid-water vapor aerosol nucleation rates from dimethylsulfide oxidation, *Geophys. Res. Lett*., 30(22), 2136, doi: 10.1029/2003GL018370, 2003.

Pszenny, A. P., J. Moldanova, W.C. Keene, R. Sander, J. R. Maben, M. Martinez, P. J. Crutzen, D. Perner and **R.G. Prinn**, Halogen Cycling and Aerosol pH in the Hawaiian Marine Boundary Layer, *Atmos. Chem. Phys.,* 4, 147-168, 2004.

Felzer, B., D. Kicklighter, J. Melillo, C. Wang, Q. Zhuang and **R. Prinn**, Effects of ozone on net primary production and carbon sequestration in the conterminous United States using a biogeochemistry model, *Tellus*, 56B, 230-248, 2004.

Rial, J., R. Pielke, M. Beniston, M. Claussen, J. Canadell, P. Cox, H. Held, N. de Noblet-Ducoudre, **R.G. Prinn,** J. Reynolds and J. Salas, Nonlinearities, Feedbacks and Critical Thresholds within the Earths' Climate System, *Climatic Change***, 65,** 11-38, 2004.

Prinn, R.G., Non-CO_2 Greenhouse Gases, in *The Global Carbon Cycle*, ed. C. Field and M. Raupach, Island Press, Washington, D.C., pgs. 205-216, 2004.

Sabine, S. L., M. Heiman, P. Artaxo, D. Bakker, C. A. Chen, C. Field, N. Gruber, C. LeQuere, **R.G. Prinn**, J. E. Richey, P. Lankao, J. Sathaye and R. Valentini, Current Status and Past Trends of the Global Carbon Cycle, in *The Global Carbon Cycle*, ed. C. Field and M. Raupach, Island Press, Washington D.C., pgs. 17-44, 2004.

Prinn, R.G., Complexities in the Climate System and Uncertainties in Forecasts, *in The State of the Planet: Frontiers and challenges in Geophysics,* eds. S. Sparks and C. Hawksworth, Geophysical Monographs, **150**, American Geophysical Union, pgs. 297-305, 2004.

O'Doherty, S., D.M. Cunnold, A. Manning, B.R. Miller, R.H.J. Wang, P.B. Krummel, P.J. Fraser, P.G. Simmonds, A. McCulloch, R.F. Weiss, P. Salameh, L.W. Porter, **R.G. Prinn,** J. Huang, G. Sturrock, D. Ryall, R.G. Derwent and S.A. Montzka, Rapid growth of HFC-134a, HCFC-141b, HCFC-142b and HCFC- 22 from AGAGE observations at Cape Grim, Tasmania and Mace Head, Ireland, *J. Geophys. Res.,* **109**, D06310, doi: 10.1029/2003JD004277, 2004.

Simmonds, P.G., R.G. Derwent, A.J. Manning, P.J. Fraser. P.B. Krummel, S. O'Doherty, **R.G. Prinn**, D.M. Cunnold, B.R. Miller and H.J. Wang, AGAGE Observations of Methyl Bromide and Methyl Chloride at Mace Head, Ireland, and Cape Grim, Tasmania, 1998-2001, *J. Atmos. Chem*., **47**, 243-269, 2004.

Wang, C. and **R.G. Prinn**, Reply to comment by John H. Helsdon Jr. on "On the roles of deep convective clouds in tropospheric chemistry", *J. Geophys. Res.,* **109**, D10205, doi:10.1029/2002JD002399, 2004.

Zhuang, Q., J.M. Melillo, D.W. Kicklighter, **R.G. Prinn**, A.D. McGuire, P.A. Steudler, P.S. Felzer and S. Hu, Methane fluxes between terrestrial ecosystems and the atmosphere at northern high latitudes during the past century: A retrospective analysis with a process-based biogeochemistry model, *Global Biogeochemical Cycles*, **18,** GB3010, doi: 10.1029/2004GB002239, 2004.

Reimann, S., A.J. Manning, 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.R. Greally, K. Stemmler, M. Hill and D. Folini, Low methyl chloroform emissions inferred from long-term atmospheric measurements, *Nature*, **433**, 506-508, doi: 10.1038/nature03220, 2005.

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. Porter, B.R. Miller and P. Krummel, Evidence for variability of atmospheric hydroxyl radicals over the past quarter century, *Geophys. Res. Lett*., **32**, L07809, doi:10.1029/2004GL022228, 2005.

Lucas, D. D. and **R.G. Prinn**, Parametric sensitivity and uncertainty analysis of dimethylsulfide oxidation in the clear-sky remote marine boundary layer, *Atmos. Chem. Phys*., **5**, 1505-1525, 2005.

Chen, Y.-H. and **R.G. Prinn**, Atmospheric modeling of high-frequency methane observations: Importance of interannually varying transport. *J. Geophys. Res.,* **110**, D10303, doi: 10.1029/2004JD005542, 2005.

Wang, C., and **R.G. Prinn**, Correction to "Reply to comment by John H. Helsdon Jr. on 'On the roles of deep convective clouds in tropospheric chemistry' by C. Wang and R.G. Prinn", *J. Geophys. Res.,* **110**, D14204, doi: 10.1029/2003JD001571, 2005.

Prinn, R. and S. Dorling, Climate change and air quality: International perspectives and policy implications, *Environmental Management*, 37-40, October 2005.

Prinn, R.G., Impacts of air pollutant caps on climate, *CONCAWE Review*, **14**, Number 2, 4-8, 2005.

Felzer, B., J. Reilly, J. Melillo, D. Kicklighter, M. Sarofim, C. Wang, **R.G. Prinn** and Q. Zhuang, Effects of Ozone on Carbon Sequestration and climate policy using a Biogeochemical Model, *Climatic Change*, 73, 345- 373, 2005.

Lucas, D.D. and **R.G. Prinn**, Sensitivities of gas-phase dimethylsulfide oxidation products to the assumed mechanisms in a chemical transport model, *J. Geophys. Res*., **110**, D21312, doi:10.1029/2004JD005386, 2005.

Greally, B.R., P.G. Simmonds, S. O'Doherty, A. McCulloch, B.R. Miller, P.K. Salameh, J. Muhle, T. Tanhua, C. Harth, R.F. Weiss, P.J. Fraser, P.B. Krummel, B.L. Dunse, L.W. Porter, and **R.G. Prinn,** Improved continuous *in situ* measurements of C_1-C_3 PFCs, HFCs, HCFCs, CFCs and SF_6 in Europe and Australia, *Environmental Sciences*, **2(2-3)**, 253-261, 2005.

Chen, Y.-H. and **R.G. Prinn**, Estimation of atmospheric methane emissions between 1996-2001 using a 3D global chemical transport model, *J. Geophys. Res.*, **111***,* D10307, doi:10.1029/2005JD006058, 2006.

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

Zhuang, Q., J.M. Melillo, M.C. Sarofim, D.W. Kicklighter, A.D. McGuire, B.S. Felzer, A. Sokolov, **R.G. Prinn**, M.C. Sarofim, P.A. Steudler, and S. Hu, CO_2 and CH_4 exchanges between land ecosystems and the atmosphere in northern high latitudes over the 21st century, *Geophys. Res. Lett.*, **33,** L17403, doi:10.1029/2006GL026972, 2006.

Reilly, J., M. Sarofim, S. Paltsev, and **R. Prinn**, The role of non-CO_2 GHGs in climate policy: Analysis using the MIT IGSM, *Energy Journal*, Multi-greenhouse Gas Mitigation and Climate Policy Special Issue, 503- 520, 2006.

Piers Forster, V. Ramaswamy, Paulo Artaxo, Terje Berntsen, Richard Betts, David Fahey, James Haywood, Judith Lean, David Lowe, Gunnar Myhre, John Nganga, **Ronald Prinn,** Graciela Raga, Michael Schulz, Robert Van Dorland (2007). Changes in Atmospheric Constituents and in Radiative Forcing, in *Climate Change 2007: The Physical Science Basis.* Contribution of Working Group I to the *Fourth Assessment Report of the Intergovernmental Panel on Climate Change,* eds. S. Solomon, S. Qin, M. Manning, Z. Chen, M. Marquis, K. Averyt, M. Tignor and H. Miller, Cambridge University Press, Cambridge, UK and New York, USA, Chapter 2, pp 129-234, 2007.

Jiang, X., W.L. Ku, R.-L. Shia, Q. Li, J.W. Elkins, **R.G. Prinn,** and Y.L. Yung, Seasonal cycle of N_2O: Analysis of data, *Global Biogeochem. Cycles,* **21,** GB1006, doi:10.1029/2006GB002691, 2007.

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, Maione, G. Nickless, F. Stordal, and R.G. Derwent, Observations of 1,1-difluoroethane (HFC-152a) at AGAGE and SOGE monitoring stations 1994-2004 and derived global and regional emission estimates, *J. Geophys. Res.,* **112**, D06308, doi:10.1029/2006JD007527, 2007.

Zhuang, Q., J.M. Melillo, A.D. McGuire, D.W. Kicklighter, **R.G. Prinn**, P.A. Steudler, B.S. Felzer, and S. Hu, Net Emissions of CH4 and CO2 in Alaska: Implications for the Region's Greenhouse Budget, *Ecological Applications*, **17(1),** 203-212, 2007.

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

Prinn, R.G., J. Reilly, M. Sarofim, C. Wang, and B. Felzer, Effects of air pollution control on climate: results from an integrated global system model, in *Human-induced climate change: an interdisciplinary assessment,* eds. M. Schlesinger, H. Kheshgi, J. Smith, F. de la Chesnaye, J. Reilly, T. Wilson and C. Kolstad, Cambridge U. Press, pgs. 93-102, 2007.

Reilly, J., S. Paltsev, B. Felzer, X. Wang, D. Kicklighter, J. Melillo, **R. Prinn**, M. Sarofim, A. Sokolov, and C. Wang, Global economic effects of changes in crops, pasture, and forests due to changing climate, carbon dioxide, and ozone, *Energy Policy,* **35**, 5370-5383, 2007.

Yu, Y. A. Panday, E. Hodson, B. Galle, and **R. Prinn,** Monocyclic aromatic hydrocarbons in Kathmandu during the winter season. *Water Air Soil Pollution,* doi: 10.1007/s11270-007-9607-6, 2007.

Castanho, A. D. de A., **R. Prinn,** V. Martins, M. Herold, C. Ichoku, and L. Molina, Analysis of Visible/SWIR surface reflectance ratios for aerosol retrievals from satellites in Mexico City Urban Areas, *Atmos. Chem. Phys.,* **7**, 5467-5477, 2007.

Nevison, C. D., N. Mahowald, R. Weiss and **R. Prinn,** Interannual and seasonal variability in Atmospheric N_2O, *Global Biogeochem. Cycles,* 21, GB3017, doi:10.1029/2006GB002755, 2007.

Huang, J., A. Golombek, **R. Prinn,** R. Weiss, P. Fraser, P. Simmonds, E. J. Dlugokencky, B. Hall, J. Elkins, P. Steele, R. Langenfelds, P. Krummel, G. Dutton, and L. Porter, Estimation of regional emissions of nitrous oxide from 1997 to 2005 using multi-network measurements, a chemical transport model, and an inverse method, *J. Geophys. Res.,* 113, D17313, doi: 10.1029/2007JD009381, 2008.

Rigby, M., **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.

Stohl, A., Seibert, P., Arduini, J., Eckhardt, S., Fraser, P., Greally, B. R., Maione, M., O'Doherty, S., **Prinn, R.** G., Reimann, S., Saito, T., Schmidbauer, N., Simmonds, P. G., Vollmer, M. K., Weiss, R. F., and Yokouchi, Y., An analytical inversion method for determining regional and global emissions of greenhouse gases: sensitivity studies and application to halocarbons, *Atmos. Chem. Phys.,* 9, 1597-1620, doi:10.5194/acp-9-1597-2009, 2009.

Yu, Y.A., B. Galle, E. Hodson, A. Panday, **R. Prinn** and S. Wang, Observations of High Rates of NO_2-HONO Conversion in the Nocturnal Atmospheric Boundary Layer at an Urban Site in Kathmandu, Nepal, *Atmos. Chem. Phys.*, 9(17), 6401-6415, doi:10.5194/acp-9-6401-2009, 2009.

Mühle, J., J. Huang, R.F. Weiss, **R.G. Prinn,** B.R. Miller, P.K. Salameh, C.M. Harth, P.J. Fraser, L.W. Porter, B.R. Greally, S.O. O'Doherty, and P.G. Simmonds, Sulfuryl Fluoride in the Global Atmosphere, *J. Geophys.Res.*, 114, D05306, doi: 10.1029/2008JD011162, 2009.

O'Doherty, S., D. M. Cunnold, B. R. Miller, J. Mühle, A. McCulloch, P. G. Simmonds, A. J. Manning, S. Reimann, M. K. Vollmer, B. R. Greally, **R. G. Prinn**, P. J. Fraser, L. P. Steele, P. B. Krummel, B. L. Dunse, W. Porter, C. R. Lunder, N. Schmidbauer, O. Hermansen, P. K. Salameh, C. M. Harth, R. H. J. Wang, and R. F. Weiss, Global and regional emissions of HFC-125 (CHF_2CF_3) from in situ and air archive atmospheric observations at AGAGE and SOGE observatories, *J. Geophys. Res.,* 114, D23304, doi:10.1029/2009JD012184, 2009.

Sokolov, A., P.H. Stone, C.E. Forest, **R.G. Prinn,** M.C. Sarofim, M. Webster, S. Paltsev, C.A. Schlosser, D. Kicklighter, S. Dutkiewicz, J. Reilly, C. Wang, B. Felzer, and H.D. Jacoby, Probabilistic forecast for 21st century climate based on uncertainties in emissions (without policy) and climate parameters. *J. Climate*, 22(19), 5175-5204, doi:10.1175/2009JCLI2863.1, 2009. CORRIGENDUM. *J. Climate*, 23, 2230–2231, doi:10.1175/2009JCLI3566.1, 2010.

Alvarado, M.J., and **R.G. Prinn,** Formation of Ozone and Growth of Aerosols in Young Smoke Plumes from Biomass Burning, 1: Lagrangian Parcel Studies, *J. Geophys. Res.,*114, D09306, doi:10.1029/2008JD011144, 2009.

Alvarado, M.J., C. Wang and **R.G. Prinn**, Formation of Ozone and Growth of Aerosols in Young Smoke Plumes from Biomass Burning, 2: 3D Eulerian Studies, *J. Geophys. Res*., 114, D09307, doi:10.1029/2008JD011186, 2009.

Patra, P. K., M. Takigawa, K. Ishijima, B.-C. Choi, D. Cunnold, E. J. Dlugokencky, P. Fraser, A. J. Gomez-Pelaez, T.-Y. Goo, J.-S. Kim, P. Krummel, R. Langenfelds, F. Meinhardt, H. Mukai, S. O'Doherty, **R.G. Prinn,** P.Simmonds, P.Steele, Y. Tohjima, K. Tsuboi, K. Uhse, R. Weiss, D. Worthy, and T. Nakazawa, Growth rate, seasonal, synoptic and diurnal variations and budget of methane in the lower atmosphere. *J. Meteorological Society Japan,* 87(4), 635-663, 2009.

Panday, A., and **R. Prinn**, Diurnal cycle of air pollution in the Kathmandu Valley, Nepal: Observations. *J. Geophys. Res.,* 114, D09305, doi:10.1029/2008JD009777, 2009.

Panday, A., **R. Prinn**, and C. Schär., The diurnal cycle of air pollution in the Kathmandu Valley, Nepal: Modeling results. *J. Geophys. Res.,* 114, D09808, doi:10.1029/2008JD009808, 2009.

Selin, N.E., S. Wu, K.M. Nam, J.M. Reilly, S. Paltsev, **R.G. Prinn**, and M. D. Webster. Global health and economic impacts of future ozone pollution, *Environ. Res. Lett.* 4, 044014, doi:10.1088/1748-9326/4/4/044014, 2009.

Hodson, E.L., D. Martin, and **R.G. Prinn,** The municipal solid waste landfill as a source of ozone-depleting substances in the United States and United Kingdom, *Atmos. Chem. Phys.,* 10, 1899-1010, doi:10.5194/acp-10-1899-2010, 2010.

Wang, C., and **R.G. Prinn**. Potential climatic impacts and reliability of very large-scale wind farms, *Atmos. Chem. Phys.,*10, 2053–2061, doi:10.5194/acp-10-2053-2010, 2010.

Prinn, R., S. Paltsev, A. Sokolov, M. Sarofim, J. Reilly, and H. Jacoby, Scenarios with MIT integrated global systems model: significant global warming regardless of different approaches. *Climatic Change*, 104: 515-537, 2011, doi:10.1007/s10584-009-9792-y, 2010.

Mühle, J., Ganesan, A. L., Miller, B. R., Salameh, P. K., Harth, C. M., Greally, B. R., Rigby, M., Porter, L. W., Steele, L. P., Trudinger, C. M., Krummel, P. B., O'Doherty, S., Fraser, P. J., Simmonds, P. G., **Prinn, R. G**., and Weiss, R. F.: Perfluorocarbons in the global atmosphere: tetrafluoromethane, hexafluoroethane, and octafluoropropane, *Atmos. Chem. Phys.,* 10, 5145-5164, doi:10.5194/acp-10-5145-2010, 2010.

Xiao, X., **R.G. Prinn**, P. J. Fraser, P. G. Simmonds, R. F. Weiss, S. O'Doherty, B. R. Miller, P. K. Salameh, C. Harth, P. B. Krummel, L. W. Porter, J. Muhle, B. R. Greally, D. Cunnold, R. Wang, S. A. Montzka, J. W. Elkins, G. S. Dutton, T. M. Thompson, J. H. Butler, B. D. Hall, S. Reimann, M. K. Vollmer, F. Stordal, C. Lunder, M. Maione, J. Arduini, and Y. Yokouchi. Optimal estimation of the surface fluxes of methyl chloride using a 3-D global chemical transport model, *Atmos. Chem. Phys.* 10, 5515-5533, doi:10.5194/acp-10-5515-2010, 2010.

McGuire, A. D., D. J. Hayes, D. W. Kicklighter, M. Manizza, Q. Zhuang, M.Chen, M. J. Follows, K. R. Gurney, W. McClelland, J. M. Melillo, B. J. Peterson, and **R.G. Prinn**, An analysis of the carbon balance of the Arctic Basin from 1997 to 2006, *Tellus 62B*:455-474, doi:10.1111/j.1600-0889.2010.00497.x, 2010.

Miller, B.R., Rigby, M., Kuijpers, L.J.M., Krummel, P.B., Steele, L. P., Leist, M., Fraser, P. J., McCulloch, A., Harth, C., Salameh, P., Mühle, J., Weiss, R. F., **Prinn, R. G.**, Wang, R. H. J., O'Doherty, S., Greally, B. R., and Simmonds, P. G.: HFC-23 (CHF_3) emission trend response to HCFC-22 ($CHClF_2$) production and recent HFC-23 emission abatement measures, *Atmos. Chem. Phys.,* 10, 7875-7890, doi:10.5194/acp-10-7875-2010, 2010.

Rigby, M., J. Mühle, B. R. Miller, **R.G. Prinn**, P. B. Krummel, L. P. Steele, P. J. Fraser, P. K. Salameh, C. M. Harth, R. F. Weiss, B. R. Greally, S. O'Doherty, P. G. Simmonds, M. K.Vollmer, S. Reimann, J. Kim, K.-R. Kim, H. J. Wang, J. G. J. Olivier, E. J. Dlugokencky, G. S. Dutton, B. D. Hall, and J. W. Elkins, History of atmospheric SF6 from 1973 to 2008, *Atmos. Chem. Phys*., 10, 10305-10320, doi:10.5194/acp-10-10305-2010, 2010.

Xiao, X., **Prinn, R. G.,** Fraser, P. J., Weiss, R. F., Simmonds, P. G., O'Doherty, S., Miller, B. R., Salameh, P. , Harth, C. M., Krummel, P. B., Golombek, A., Porter, L. W., Elkins, J. W., Dutton, G. S., Hall, B. D., Steele, L. P., Wang, R. H. J., and Cunnold, D. M.: Atmospheric three-dimensional inverse modeling of regional industrial emissions and global oceanic uptake of carbon tetrachloride, *Atmos. Chem. Phys.,*10, 10421-10434, doi:10.5194/acp-10-10421-2010, 2010.

Vollmer, M., B. R.Miller, M. Rigby, S. Reimann, J. Muhle, P. Krummel, S. O'Doherty, J. Kim, T. Rhee, R. Weiss, P. Fraser, P. Simmonds, P. Salameh, C. Harth, R. H. J. Wang, L. P. Steele, D. Young, C. Lunder, O. Hermansen, D. Ivy, T. Arnold, N. Schmidbauer, K.-R. Kim, B. Greally, M. Hill, M. Leist, A. Wenger, **R.G. Prinn**, Atmospheric histories and global emissions of the anthropogenic hydrofluorocarbons HFC- 365mfc, HFC-245fa, HFC-227ea, and HFC-236fa, *J. Geophys. Res.*, 116, D08304, doi:10.1029/2010JD015309, 2011.

Weiss, R.F., and **R.G. Prinn**, Quantifying greenhouse gas emissions from atmospheric measurements: a critical reality check for climate legislation, *Phil. Trans. R. Soc. A,* 2011, 369, 1925-1942*,* doi:10.1098/rsta.2011.0006, 2011*.*

Rigby, M., A. L. Ganesan, **R.G. Prinn,** Deriving emissions times series from sparse atmospheric mole fractions, *J. Geophys. Res.*, 116, D08306, doi:10.1029/2010JD015401, 2011a.

Cohen, J. B., **R.G. Prinn**, C. Wang, The impact of detailed urban-scale processing on the composition, distribution, and radiative forcing of anthropogenic aerosols, *Geophys. Res. Lett.,* 38*,* L10808 doi:10.1029/2011GL047417, 2011.

Nevison, C. D., E. Dlugokencky, G. Dutton, J.W. Elkins, P. Fraser, B. Hall, P. B. Krummel, R. L. Langenfelds, S. O'Doherty, **R.G. Prinn**, L. P. Steele, R. F. Weiss, Exploring causes of interannual variability in the seasonal cycles of tropospheric nitrous oxide, *Atmos. Chem. Phys*, 11, 3713-3730, doi:10.5194/acp-11-3713-2011, 2011.

Rigby, M., A. J. Manning, and **R.G. Prinn**, Inversion of long-lived trace gas emissions using combined Eulerian and Lagrangian chemical transport models, *Atmos. Chem. Phys.,* 11, 9887-9898, doi:10.5194/acp-11-9887-2011, 2011b.

Wang, C., and **R.G. Prinn,** Potential climatic impacts and reliability of large-scale offshore wind farms, *Environ. Res. Lett*., 6, 025101*,* doi:10.1088/1748-9326/6/2/025101, 2011.

Cohen, J.B., and **R.G. Prinn,** Development of a fast, urban chemistry metamodel for inclusion in global models, *Atmos. Chem. Phys*., 11, 7629-7656, doi:10.5194/acp-11-7629-2011, 2011.

Prinn, R., S. Paltsev, A. Sokolov, M. Sarofim, J. Reilly, H. Jacoby, Scenarios with MIT Integrated Global Systems Model: Significant global warming regardless of different approaches, *Climatic Change*, 104:515-537, doi: 10.1007/s10584-009-9792-y, 2011.

Patra, P.K., S. Houweling, M. Krol, P. Bousquet, D. Belikov, D. Bergmann, H. Bian, P. Cameron-Smith, M. P. Chipperfield, K. Corbin, A. Fortems-Cheiney, A. Fraser, E. Gloor, P. Hess, A. Ito, S. R. Kawa, R. M. Law, Z. Loh, S. Maksyutov, L. Meng, P. I. Palmer, **R. G. Prinn**, M. Rigby, R. Saito, C. Wilson, TransCom model simulations of CH_4 and related species: linking transport, surface flux and chemical loss with CH_4 variability in the troposphere and lower stratosphere, *Atmos. Chem. Phys*., 11, 12813-12837, doi:10.5194/acp-11-12813-2011, 2011.

Webster, M. A., A.P. Sokolov, J. M. Reilly, C. E. Forest, S. Paltsev. A. Schlosser, C. Wang, D. Kicklighter, M. Sarofim, J. Melillo, **R.G. Prinn**, H. D. Jacoby, Analysis of climate policy targets under uncertainty, *Climatic Change* 112: 569-583, doi: 10.1007/s10584-011-0260-0, 2011.

Ivy, D.J., T.J. Arnold, C.M. Harth, L.P. Steele, J. Muhle, M. Rigby, P.K. Salameh, M. Leist, P.B. Krummel, P.J. Fraser, R.F. Weiss, **R.G. Prinn**, Atmospheric histories and growth trends of C_4F_{10}, C_5F_{12}, C_6F_{14}, C_7F_{16} and C_8F_{18}, *Atmos. Chem. Phys.* 12, 4313-4325, doi:10.5194/acp-12-4313-2012, 2012.

Ivy, D.J., M. Rigby, M. Baasandorj, J.B. Burkholder, **R.G. Prinn,** Global emission estimates and radiative impact of C_4F_{10}, C_5F_{12}, C_6F_{14}, C_7F_{16} and C_8F_{18}, *Atmos. Chem. Phys.* 12, 7635-7645, doi:10.5194/acp-12-7635-2012, 2012.

Prinn, R. G., Development and application of earth system models, *Proceedings of the National Academy of Sciences,* 110 (Supp. 1): 3673-3680, 2013; Online first, doi: 10.1073/pnas.1107470109, 2012.

Sun, L., M. Webster, G. McGaughey, E. C. McDonald-Buller, T. Thompson, **R. Prinn**, A. D. Ellerman, D. T. Allen, Flexible NO_x abatement from power plants in the eastern United States, *Environ. Sci. Technol*. 46, 5607–5615, doi: 10.1021/es204290s, 2012.

Saikawa E., M. Rigby, **R.G. Prinn**, S.A. Montzka, B.R. Miller, L.J.M. Kuijpers, P.J.B. Fraser, M.K. Vollmer, T. Saito, Y. Yokouchi, C.M. Harth, J. Muhle, R.F. Weiss, P.K. Salameh, J. Kim, S. Li, S. Park, K.-R. Kim, D. Young, S. O'Doherty, P.G. Simmonds, A. McCulloch, P. B. Krummel, L.P. Steele, C. Lunder, O. Hermansen, M. Maione, J. Arduini, B. Yao, L.X. Zhou, H.J. Wang, J.W. Elkins, B. Hall, Global and regional emission estimates for HCFC-22, *Atmos. Chem. Phys.*, 12, 10033, doi:10.5194/acp-12-10033-2012, 2012.

Rigby, M., A.J. Manning, **R.G. Prinn**, The value of high-frequency, high-precision methane isotopologue measurements for source and sink estimation, *J. Geophys. Res. Atmos.* 117, D12312, doi:10.1029/2011JD017384, 2012.

Belikov, D.A., S. Maksyutov, M. Krol, A. Fraser, M. Rigby, H. Bian, A. Agusti-Panareda, D. Bergmann, P. Bousquet, P. Cameron-Smith, M.P. Chipperfield, A. Fortems-Cheiney, E. Gloor, K. Haynes, P. Hess, S. Houweling, S. R. Kawa, R. M. Law, Z. Loh, L. Meng, P. I. Palmer, P.K. Patra, **R.G. Prinn**, R. Saito, Wilson, Off-line algorithm for calculation of vertical tracer transport in the troposphere due to deep convection, *Atmos. Chem. Phys.,* 13, 1093-1114, doi:10.5194/acp-13-1093-2013, 2013.

Saikawa, E., C.A. Schlosser and **R.G. Prinn**, Global modeling of soil nitrous oxide emissions from natural processes, *Global Biogeochemical Cycles*, 27, 972-989, 10.1002/gbc.20087, 2013.

Rigby, M., **Prinn, R.G**., O'Doherty, S., Montzka, S.A., McCulloch, A., Harth, C.M., Mühle, J., Salameh, P.K., Weiss, R.F., Young, D., Simmonds, P.G., Hall, B.D., Dutton, G.S., Nance, D., Mondeel, D.J., Elkins, J.W., Krummel, P.B., Steele, L.P., and Fraser P.J., Re-evaluation of the lifetimes of the major CFCs and CH_3CCl_3 using atmospheric trends, *Atmos. Chem. Phys.* 13, 2691-2702, doi:10.5194/acp-13-2691-2013, 2013.

Fraser, A. Palmer, P.I., Feng, L., Boesch H., Cogan, A., Parker, R., Dlugokencky, E. J., Fraser, P.J., Krummel, P.B., Langenfelds, R L., O'Doherty, S., **Prinn, R.G.**, Steele, L.P., van der Schoot, M., Weiss, R.F., Estimating regional methane surface fluxes: the relative importance of surface and GOSAT mole fraction measurements, *Atmos. Chem. Phys.,* 13, 5697-5713, doi:10.5194/acp-13-5697-2013, 2013.

Saito, R., Patra, P.K , Sweeney, C., Machida, T., Krol, M., Houweling, S., Bousquet, P., Agusti-Panareda, A., Belikov, D., Bergmann, D., Bian, H., Cameron-Smith, P., Chipperfield, M., Fortems-Cheiney, A., Fraser, A., Gatti, L., Gloor, E., Hess, P., Kawa, S., Law, R., Locatelli, R., Loh, Z., Maksyutov, S., Meng, L., Miller, J., Palmer, P., **Prinn, R**., Rigby, M., Wilson, C. TransCom model simulations of methane: comparison of vertical profiles with aircraft measurements, *J. Geophys. Res.- Atmos.* 118, 3891-3904, doi:10.1002/jgrd.50380, 2013.

Ganesan, A.L., A. Chatterjee, **R.G. Prinn**, C.M. Harth, P.K. Salameh, A.J. Manning, B.D. Hall, J. Muhle, L.K. Meredith, R.F. Weiss, S. O'Doherty, and D. Young, The variability of methane, nitrous oxide and sulfur hexafluoride in Northeast India, *Atmos. Chem. Phys.* 13, 10633-10644, doi: 10.5194/acp-13-10633-2013, 2013.

Potter K.E., S. Ono, **R.G. Prinn**, Fully automated, high-precision instrumentation for the isotopic analysis of tropospheric N_2O using continuous flow isotope ratio mass spectrometry, *Rapid Communications in Mass Spectrometry* 27, 1723-1738, doi:10.1002/rcm.6623, 2013.

Zhuang, Q., M. Chen, K. Xu, J. Tang, E. Saikawa, Y. Lu, J. M. Melillo, **R. G. Prinn,** and A. D. McGuire, Response of global soil consumption of atmospheric methane to changes in atmospheric climate and nitrogen deposition, *Glob. Biogeochem. Cycles*, 27, 650-663, doi:10.1002/gbc.20057, 2013.

Thompson R.L., E. Dlugokencky, F. Chevallier, P. Ciais, G. Dutton, J.W. Elkins, R.L. Langenfelds, **R.G. Prinn**, R.F. Weiss, Y. Tohjima, P.B. Krummel, P. Fraser, and L.P. Steele, Interannual variability in tropospheric nitrous oxide, *Geophys. Res. Lett*., 40, 4426–4431, doi:10.1002/grl.50721, 2013.

Locatelli, R., P. Bousquet, F. Chevallier, A. Fortems-Cheiney, S. Szopa, M. Saunois, A. Agusti-Panareda, Bergmann, H. Bian, P. Cameron-Smith, M.P. Chipperfield, E. Gloor, S. Houweling, S. R.Kawa, M. Krol, P.K. Patra, **R.G. Prinn**, M. Rigby, R. Saito, and C. Wilson, Impact of transport model errors on the global and regional methane emissions estimated by inverse modeling, *Atmos. Chem. Phys.*, 13, 9917– 9937, doi:10.5194/acp-13-9917-2013, 2013.

Kirschke, S., P. Bousquet, P. Ciais, M. Marielle Saunois, J.G. Canadell, E.J. Dlugokencky, P. Bergamaschi, D. Bergmann, D.R. Blake, L. Bruhwiler, P. Cameron-Smith, S. Castaldi, F. Chevallier, L. Feng, A. Fraser, P.J. Fraser, M. Heimann, E.L. Hodson, S. Houweling, B. Josse,, P.B. Krummel, J.-F Lamarque, R.L. Langenfelds, C. Le Quéré, V. Naik, S. O'Doherty, P.I. Palmer, I. Pison, D. Plummer, B. Poulter, **R.G**. **Prinn,** M. Rigby, B. Ringeval, M. Santini, M. Schmidt, D.T. Shindell, I.J. Simpson, R. Spahni, L.P. Steele, S.A. Strode, K. Sudo, S. Szopa, G.R van der Werf, A. Voulgarakis, M. van Weele, R.F. Weiss, J.E. Williams and G. Zeng, Three decades of global methane sources and sinks, *Nature Geoscience,* doi:10.1038/NGEO1955, 2013.

Harris, E., D. Nelson, W. Olszewski, M. Zahniser, K, Potter, B. McManus, A. Whitehill, **R. Prinn**, and S. Ono, Development of a spectroscopic technique for continuous online monitoring of oxygen and site-specific nitrogen isotopic composition of atmospheric nitrous oxide, *Analytical Chemistry* 86, 1726-1734, doi: 10.1021/ac403606u, 2013.

Fraser, P., P.B. Krummel, L.P. Steele, C. Trudinger, D.M. Etheridge, N. Derek, S. O'Doherty, P.G. Simmonds, B.R. Miller, J. Mühle, R.F. Weiss, D.E. Oram, **R.G. Prinn**, and R.H.J. Wang, Equivalent effective stratospheric chlorine from Cape Grim Air Archive, Antarctic firn and AGAGE global measurements of ozone depleting substances, *Baseline Atmospheric Program (Australia) 2009-2010*, N. Derek, P.B. Krummel & S. Cleland (eds.), Australian Bureau of Meteorology and CSIRO Marine and Atmospheric Research, Melbourne, 17-23, 2014.

Fraser, P., B. Dunse, A. Manning, S. Walsh, R. Wang, P. Krummel, P. Steele, C. Allison, S. O'Doherty, P. Simmonds, J. Mühle, R.F. Weiss and **R.G. Prinn**, Australian carbon tetrachloride (CCl_4) emissions in a global context, *Environ. Chem.* 11, 77-88, doi: 10.1071/EN13171, 2014.

Thompson, R.L., F. Chevallier, A. Crotwell, G. Dutton, R.L. Langenfelds, **R.G. Prinn**, R.F. Weiss, Y. Tohjima,T. Nakazawa, P.B. Krummel, L.P. Steele, P. Fraser, K. Ishijima, and S. Aoki, Nitrous oxide emissions 1999 – 2009 from a global atmospheric inversion, *Atmos. Chem. Phys.* 14, 1801-1817, doi: 10.5194/acp-14-1801-2014, 2014a.

Arnold, T., D.J. Ivy, C.M. Harth, M.K. Vollmer, J. Mühle, P.K. Salameh, L.P. Steele, P.B. Krummel, R.H.J. Wang, D. Young, C.R. Lunder, O. Hermansen, T.S. Rhee, J. Kim, S. Reimann, S. O'Doherty, P.J. Fraser, P.G. Simmonds, **R.G. Prinn**, and R.F. Weiss, HFC-43-10mee atmospheric abundances and global emission estimates, *Geophys. Res. Lett.* 41, 2228-2235, doi: 10.1002/2013GL059143, 2014.

Patra, P.K., M.C. Krol, S.A. Montzka, T. Arnold, E.L. Atlas, B.R. Lintner, B.B. Stephens, B. Xiang, J.W. Elkins, P.J. Fraser, A. Ghosh, E.J. Hintsa, D.F. Hurst, K. Ishijima, P.B. Krummel, B.R. Miller, K. Miyazaki, F.L. Moore, J. Mühle, S. O'Doherty, **R.G. Prinn**, L.P. Steele, M. Takigawa, H.J. Wang, R.F. Weiss, S.C. Wofsy, and D. Young, Observational evidence for interhemispheric hydroxyl parity, *Nature*, 513, 219-223, doi:10.1038/nature13721, 2014.

Rigby, M., **R.G. Prinn**, S. O'Doherty, B.R. Miller, D. Ivy, J. Mühle, C.M. Harth, P.K. Salameh, T. Arnold, R.F. Weiss, P.B. Krummel, L.P. Steele, P.J. Fraser, D. Young and P.G. Simmonds, Recent and future trends in synthetic greenhouse gas radiative forcing, *Geophys. Res. Lett.* 41, 2623-2630, doi:10.1002/2013GL059099, 2014.

Ganesan, A.L., M. Rigby, A. Zammit-Mangion, A. J. Manning, **R. G. Prinn**, P. J. Fraser, C.M. Harth, K-R. Kim, P. B. Krummel, S. Li, J. Mühle, S.J. O'Doherty, S. Park, P. K. Salameh, L.P. Steele, and R. F. Weiss, Characterization of uncertainties in atmospheric trace gas inversions using hierarchical Bayesian methods, *Atmos. Chem. Phys.* 14, 3855-3864, doi:10.5194/acp-14-3855-2014, 2014.

Thompson, R.L., P. K. Patra, K. Ishijima, E. Saikawa, M. Corazza, U. Karstens, C. Wilson, P. Bergamaschi, E. Dlugokencky, C. Sweeney, **R. G. Prinn**, R. F. Weiss, S. O'Doherty, P. B. Krummel, L. P. Steele, P. Fraser, M. Saunois, M. Chipperfield, and P. Bousquet, TransCom N_2O model inter-comparison - Part 1: Assessing the influence of transport and surface fluxes on tropospheric N_2O variability, *Atmos. Chem. Phys*. 14, 4349- 4368, doi: 10.5194/acp-14-4349-2014, 2014b.

Saikawa, E., **R.G. Prinn**, E. Dlugokencky, K. Ishijima, G. S. Dutton, B.D. Hall, R. Langenfelds, Y. Tohjima, T. Machida, M. Manizza, M. Rigby, S. O'Doherty, P.K. Patra, C.M. Harth, R.F. Weiss, P.B. Krummel, M. van der Schoot, P.J. Fraser, L.P. Steele, S. Aoki, T. Nakazawa, and J.W. Elkins, Global and regional emissions estimates for N_2O, *Atmos. Chem. Phys.* 14, 4617-4641, doi:10.5194/acp-14-4617-2014, 2014.

Saikawa E., M. Rigby, **R.G. Prinn**, S.A. Montzka, B.R. Miller, L.J.M. Kuijpers, P.J.B. Fraser, M.K. Vollmer, T. Saito, Y. Yokouchi, C.M. Harth, J. Muhle, R.F. Weiss, P.K. Salameh, J. Kim, S. Li, S. Park, K.-R. Kim, Young, S. O'Doherty, P.G. Simmonds, A. McCulloch, P. B. Krummel, L.P. Steele, C. Lunder, O. Hermansen, M. Maione, J. Arduini, B. Yao, L.X. Zhou, H.J. Wang, J.W. Elkins, B. Hall, Corrigendum to "Global and regional emission estimates for HCFC-22", Atmos. Chem. Phys., 12, 10033, 2012, *Atmos. Chem. Phys.* 14, 4857-4858, doi:10.5194/acp-14-4857-2014, 2014.

Meredith, L.K., R. Commane, W. Munger, A. Dunn, J. Tang, S.C. Wofsy and **R.G. Prinn**, Ecosystem fluxes of hydrogen: a comparison of flux-gradient methods, *Atmos. Meas. Tech*, 7, 2787-2805, doi:10.5194/amt-7-2787-2014, 2014.

Thompson, R. L., K. Ishijima, E. Saikawa, M. Corazza, U. Karstens, P. K. Patra, P. Bergamaschi, F. Chevallier, Dlugokencky, **R. G. Prinn**, R. F. Weiss, S. O'Doherty, P. J. Fraser, L. P. Steele, P. B. Krummel, A. Vermeulen, Y. Tohjima, A. Jordan, L. Haszpra, M. Steinbacher, S. Van der Laan, T. Aalto, F. Meinhardt, M. E. Popa, J. Moncrieff, and P. Bousquet, TransCom N_2O model inter-comparison Part 2: Atmospheric inversion estimates of N_2O emissions, *Atmos. Chem. Phys.* 14, 6177-6194, doi: 10.5194/acp-14-6177-2014, 2014c.

O'Doherty, S., M. Rigby, J. Mühle, D.J. Ivy, B.R. Miller, D. Young, P.G. Simmonds, S. Reimann, M.K. Vollmer, P.B. Krummel, P.J. Fraser, L.P. Steele, B. Dunse, P.K. Salameh, C.M. Harth, T. Arnold, R.F. Weiss, J. Kim, S. Park, S. Li, C. Lunder, O. Hermansen, N. Schmitbauer, L.X. Zhou, B. Yau, R.H.J. Wang, A. Manning and **R.G. Prinn**, Global emissions of HFC-143a (CH_3CF_3) and HFC-32 (CH_2F_2) from *in situ* and air archive atmospheric observations, *Atmos. Chem. Phys.* 14, 9249-9258, doi:10.5194/acp-14-9249-2014, 2014c.

Kim, J., P. J. Fraser, S. Li, J. Mühle, A. L. Ganesan, P. B. Krummel, L.P. Steele, S. Park, S.-K. Kim, M.-K. Park,T. Arnold, C. M. Harth, P. K. Salameh, **R. G. Prinn**, R. F. Weiss, and K.-R. Kim, Quantifying aluminum and semiconductor industry perfluorocarbon emissions from atmospheric measurements, *Geophys. Res. Lett.* 41, 4787-4794, doi:10.1002/2014GL059783, 2014.

Xiang, B., P.K. Patra, S.A. Montzka, S.M. Miller, J.W. Elkins, F. Moore, E. L. Atlas, B.R. Miller, R.F. Weiss, **R.G**. **Prinn,** S.C. Wofsy, Global Emissions of Refrigerants HCFC-22 and HFC-134a: Unforeseen Seasonal Contributions, *Proc. Natl. Acad. Sci.* 111, 17379-17384, doi:10.1073/pnas.1417372111, 2014.

Thompson, R.L., A. Stohl, L.X. Zhou, E. Dlugokencky, Y. Fukuyama, Y. Tohjima, S.-Y. Kim, H. Lee, E. G. Nisbet, R.E. Fisher, D. Lowry, R.F. Weiss, **R.G. Prinn**, S. O'Doherty, D. Young, J.W.C. White, Methane emissions in East Asia for 2000-2011 estimated using an atmospheric Bayesian inversion, *J. Geophys. Res. Atmos.* 120, 4352-4369, doi:10.1002/2014JD022394, 2015.

Lunt, M.F., M. Rigby, A.L. Ganesan, A.J. Manning**, R.G. Prinn**, S. O'Doherty, J. Muhle, C. M. Harth, P.K. Salameh, T. Arnold, R.F. Weiss, T. Saito, Y. Yokouchi, P.B. Krummel, L. P. Steele, P. J. Fraser, S. Li, S. Park, S. Reimann, M.K. Vollmer, C. Lunder, O. Hermansen, N. Schmidbauer, M. Maione, J. Arduini., D. Young, P.G. Simmonds, Reconciling reported and unreported HFC emissions with atmospheric observations, *Proc. Natl. Acad. Sci. 112,* 5927-5931, doi:10.1073/pnas.1420247112, 2015.

Wells, K.C., D. B. Millet, N. Bousserez, D. K. Henze, S. Chaliyakunnel, T. J. Griffis, Y. Luan, E. J. Dlugokencky, **R. G. Prinn**, S. O'Doherty, R. F. Weiss, G. S. Dutton, J. W. Elkins, P. B. Krummel, R. Langenfelds, L. P. Steele, E. A. Kort, S. C. Wofsy, and T. Umezawa, Simulation of atmospheric N_2O with GEOS-Chem and its adjoint: evaluation of observational constraints, *Geosci. Model Dev.* 8, 3179-3198, 2015, doi:10.5194/gmd-8-3179-2015, 2015.

Zhuang, Q., X. Zhu, Y. He, C. Prigent, J M. Melillo, A. D. McGuire, **R. G. Prinn**, and D. W. Kicklighter, Influence of changes in wetland inundation extent on net fluxes of carbon dioxide and methane in northern high latitudes from 1993 to 2004, *Environ. Res. Lett.,* 10, 095009, doi:10.1088/1748-9326/10/9/095009, 2015.

Fortems-Cheiney, A., M. Saunois, I. Pison, F. Chevallier, P. Bousquet, C. Cressot, S.A. Montzka, P.J. Fraser, M.K. Vollmer, P.G. Simmonds, D. Young, S. O'Doherty, R.F. Weiss, F. Artuso, B. Barletta, D.R. Blake, S. Li, C. Lunder, B.R. Miller, S. Park, **R. Prinn**, T. Saito, L.P. Steele, Y. Yokouchi, Increase in HFC-134a emissions in response to the success of the Montreal Protocol, *J. Geophys. Res. Atmos.,* 120*,* 11,728–11,742*,* doi:10.1002/2015JD023741*,* 2015.

Fang, X., G.J.M. Velders, A.R. Ravishankara, M.J. Molina, J. Hu, and **R.G. Prinn**, Hydrofluorocarbon (HFC) Emissions in China: An Inventory for 2005–2013 and Projections to 2050, *Environ. Sci. Technol. 50* (4), 2027-2034, doi:10.1021/acs.est.5b04376, 2016.

Simmonds, P. G., M. Rigby, A.J. Manning, M. F. Lunt, S. O'Doherty, D. Young, A. McCulloch, P. J. Fraser, S. Henne, M. K. Vollmer, S. Reimann, A. Wenger, J. Mühle, C. M. Harth, P. K. Salameh, T. Arnold, R. F. Weiss, P. B. Krummel, L. P. Steele, B. L. Dunse, B. R. Miller, C. R. Lunder, O. Hermansen, N. Schmidbauer, T. Saito, Y. Yokouchi, S. Park, S. Li, B. Yao, L. Zhou, J. Arduini, M. Maione, R. H. J. Wang, D. Ivy and **R. G. Prinn**, Global and regional emissions estimates of 1,1-difluoroethane (HFC-152a, CH_3CHF_2) from in situ and air archive observations, *Atmos. Chem. Phys., 16*, 365-382, doi:10.5194/acp-16-365-2016, 2016.

Tian, H., J. Melillo, A. Michalak, P. Ciais, P. Canadell, P. Friedlingstein, E. Saikawa, S. Wofsy, K. Gurney, L. Bruhwiler, E. Dlugokencky, S. A. Sitch, M. Saunois, P. Bousquet, **R. Prinn,** S. Pan, B. Zhang, G. Chen, B. Poulter, C. Schwalm, J. Yang, D. Huntzinger, and C. Lu, The terrestrial biosphere as a net source of greenhouse gases to the atmosphere, *Nature* 531, 225-228, doi: 10.1038/nature16946, 2016.

Chirkov, M., G.P. Stiller, A. Laeng, S. Kellmann, T. von Clarmann, C. Boone, J.W. Elkins, A. Engel, N. Glatthor, U. Grabowski, C.M. Harth, M. Kiefer, F. Kolonjari, P.B. Krummel, A. Linden, C.R. Lunder, B.R. Miller S.A. Montzka, J. Mühle, S. O'Doherty, J. Orphal, **R.G. Prinn**, G. Toon, M.K. Vollmer, K.A. Walker, Weiss, A. Wiegele, and D. Young, Global HCFC-22 measurements with MIPAS: retrieval, validation, global distribution and its evolution over 2005-2012, *Atmos. Chem. Phys., 16,* 3345- 3368, doi:10.5194/acp-16-3345-2016, 2016.

Fang, X., M. Shao, A. Stohl, Q. Zhang, J. Zheng, H. Guo, C. Wang, M. Wang, J. Ou, R. L. Thompson, and **G. Prinn**, Top-down estimates of benzene and toluene emissions in Pearl River Delta and Hong Kong, China, *Atmos. Chem. Phys*., 16, 3369-82, doi: 10.5194/acp-16-3369-2016, 2016.

Vollmer, M.K., J. Mühle, C.M. Trudinger, M. Rigby, S.A. Montzka, C.M. Harth, B.R. Miller, S. Henne, P.B. Krummel, B.D. Hall, D. Young, J. Kim, J. Arduini, A. Wenger, B. Yao, S. Reimann, S. O'Doherty, M. Maione, D.M. Etheridge, S. Li, D.P. Verdonik, S. Park, G. Dutton, L.P. Steele, C.R. Lunder, T.S. Rhee, O. Hermansen, N. Schmidbauer, R.H.J. Wang, M. Hill, P.K. Salameh, R.L. Langenfelds, L. Zhou, T. Blunier, J. Schwander, J.W. Elkins, J.H. Butler, P.G. Simmonds, R.F. Weiss, **R.G. Prinn**, and P.J. Fraser, Atmospheric histories and global emissions of halons H-1211 ($CBrClF_2$), H-1301 ($CBrF_3$), and H-2402 ($CBrF_2CBrF_2$), *J. Geophys. Res. Atmos,. 121, 3663-3686,* doi: 10.1002/2015JD024488, 2016.

Brasseur, G., M. Gupta, B. Anderson, S. Balasubramanian, S. Barrett, D. Duda, G. Fleming, P. Forster, J. Fuglestvedt, A. Gettelman, R. Halthore, S. Jacob, M. Jacobson, A. Khodayari, K. Liou, M. Lund, R. Miake-Lye, P. Minnis, S. Olsen, J. Penner, **R. Prinn**, U. Schumann, H. Selkirk, A. Sokolov, N. Unger, P. Wolfe, H. Wong, D. Wuebbles, B. Yi, P. Yang, and C. Zhou, 2015: Impact of Aviation on Climate: FAA's Aviation Climate Change Research Initiative (ACCRI) Phase II. *Bull. Amer. Meteor. Soc*. 97(4): 561-583, doi:10.1175/BAMS-D-13-00089.1, 2016

McNorton, J., M. P. Chipperfield, M. Gloor, C. Wilson, W. Feng, G. D. Hayman, M. Rigby, P. B. Krummel, S. O'Doherty, **R. G. Prinn**, R. F. Weiss, D. Young, E. Dlugokencky, and S. A. Montzka, Role of OH variability in the stalling of the global atmospheric CH_4 growth rate from 1999 to 2006, *Atmos. Chem. Phys*. 16, 7843-7956, 2016, doi:10.5194/acp-16-7943-2016, 2016.

Saunois, M., P. Bousquet, B. Poulter, A. Peregon, P. Ciais, J. G. Canadell, E. J. Dlugokencky, G. Etiope, D. Bastviken, S. Houweling, G. Janssens-Maenhout, F. N. Tubiello, S. Castaldi, R. B. Jackson, M. Alexe, V. K. Arora, D. J. Beerling, P. Bergamaschi, D. R. Blake, G. Brailsford, V. Brovkin, L. Bruhwiler, C. Crevoisier, P. Crill, C. Curry, C. Frankenberg, N. Gedney, L. Höglund-Isaksson, M. Ishizawa, A. Ito, F. Joos, H.-S. Kim, T. Kleinen, P. Krummel[2] J.-F. Lamarque, R. Langenfelds, R. Locatelli, T. Machida, S. Maksyutov, K. C. McDonald, J. Marshall, J. R. Melton, I. Morino, S. O'Doherty, F.-J. W. Parmentier, P. K. Patra, C. Peng, S. Peng, G. P. Peters, I. Pison, C. Prigent, **R. Prinn**, M. Ramonet, W. J. Riley, M. Saito, R. Schroeder, I. J. Simpson, R. Spahni, P. Steele, A. Takizawa, B. F. Thornton, H. Tian, Y. Tohjima, N. Viovy, A. Voulgarakis, M. van Weele, G. van der Werf, R. Weiss, C. Wiedinmyer, D. J. Wilton, A. Wiltshire, D. Worthy, D.B. Wunch, X. Xu, Y. Yoshida, B. Zhang and Q. Zhu, The global methane budget: 2000-2012, *Earth Syst. Sci. Data*, doi:10.5194/essd-2016-25, 2016.

Chipperfield, M.P., Q. Liang, M. Rigby, R. Hossaini, S.A. Montzka, S. Dhomse, W. Feng, **R.G. Prinn**, R. F. Weiss, C.M. Harth, P.K. Salameh, J. Muhle, S. O'Doherty, D. Young, P. G. Simmonds, P. B. Krummel, P. J. Fraser, L.P. Steele, J.D. Happell, R.C. Rhew, J. Butler, S.A. Yvon-Lewis, B. Hall, D. Nance, F. Moore, B.R. Miller, J.W. Elkins, J.J. Harrison, C.D. Boone, E.L. Atlas and E. Mahieu, Model sensitivity studies of the decrease in atmospheric carbon tetrachloride, *Atmos. Chem. Phys.*, doi:10.5194/acp-16-15741-2016, 2016.

Meredith, L.K., R. Commane, T. F. Keenan, S. T. Klosterman, J. W. Munger, P. H. Templer, J. Tang, S. C. Wofsy, and **R. G. Prinn**, Ecosystem fluxes of hydrogen in a mid-latitude forest driven by soil microbes and plants*, Global Change Biology*, 23(2):906-919, doi:10.1111/gcb.13463, 2017.

Rigby, M., S.A. Montzka, **R.G. Prinn**, J.W.C. White, D. Young, S. O'Doherty, M. Lunt, A.L. Ganesan, A. Manning, P. Simmonds, P.K. Salameh, C.M. Harth, J. Muhle, R.F. Weiss, P.J. Fraser, L.P. Steele, P.B. Krummel, A. McCulloch and S. Park, Role of atmospheric oxidation in recent methane growth, *Proc. Nat. Academy of Sciences*, 114, 21, 5373-5377, doi: 10.1073/pnas.1616426114, 2017.

Simmonds, P. G., M. Rigby, A. McCulloch, S. O'Doherty, D. Young, J. Mühle, P.B. Krummel, L.P. Steele, P.J. Fraser, A.J. Manning, R.F. Weiss, P.K. Salameh, C.M. Harth, R.H.J. Wang, and **R.G. Prinn**, Changing trends and emissions of hydrochlorofluorocarbons (HCFCs) and their hydrofluorocarbon (HFCs) replacements, *Atmos. Chem. Phys.*, 17(7), 4641-4655, doi:10.5194/acp-17-4641-2017, 2017.

Meinshausen, M., E. Vogel, A. Nauels, K. Lorbacher, N. Meinshausen, D. Etheridge, P. Fraser, S. A. Montzka, P. Rayner, C. Trudinger, P. Krummel, U. Beyerle, J. G. Cannadell, J. S. Daniel, I. Enting, R. M. Law, S. O'Doherty, **R. G. Prinn**, S. Reimann, M. Rubino, G. J. M. Velders, M. K. Vollmer, and R. Weiss, Historical greenhouse gas concentrations for climate modelling (CMIP6), *Geosci. Model Dev.*, 10(5), 2057-2116, doi:10.5194/gmd-10-2057-2017, 2017.

Ganesan, A., M. Rigby, M. Lunt, R. J. Parker, H. Boesch, N. Goulding, T. Umezawa, A. Zahn, A. Chatterjee, **Prinn**, Y. Tiwari, M. van der Schoot, P. B. Krummel, Atmospheric observations show accurate reporting and little growth in India's methane emissions, *Nature Communications*, 8, 836, doi:10.1038/s41467-017-00994-7, 2017.

Saunois, M., Bousquet, P., Poulter, B., Peregon, A., Ciais, P., Canadell, J. G., Dlugokencky, E. J., Etiope, G., Bastviken, D., Houweling, S., Janssens-Maenhout, G., Tubiello, F. N., Castaldi, S., Jackson, R. B., Alexe, M., Arora, V. K., Beerling, D. J., Bergamaschi, P., Blake, D. R., Brailsford, G., Bruhwiler, L., Crevoisier, C., Crill, P., Covey, K., Frankenberg, C., Gedney, N., Höglund-Isaksson, L., Ishizawa, M., Ito, A., Joos, F., Kim, H.-S., Kleinen, T., Krummel, P., Lamarque, J.-F., Langenfelds, R., Locatelli, R., Machida, T., Maksyutov, S., Melton, J. R., Morino, I., Naik, V., O'Doherty, S., Parmentier, F.-J. W., Patra, P. K., Peng, C., Peng, S., Peters, G. P., Pison, I., **Prinn, R.,** Ramonet, M., Riley, W. J., Saito, M., Santini, M., Schroeder, R., Simpson, I. J., Spahni, R., Takizawa, A., Thornton, B. F., Tian, H., Tohjima, Y., Viovy, N., Voulgarakis, A., Weiss, R., Wilton, D. J., Wiltshire, A., Worthy, D., Wunch, D., Xu, X., Yoshida, Y., Zhang, B., Zhang, Z. and Zhu, Q.: Variability and quasi-decadal changes in the methane budget over the period 2000–2012, *Atmos. Chem. Phys.,* 17, 11135-11161, doi:10.5194/acp-17-11135-2017, 2017.

Liang, Q., M. P. Chipperfield, E. L. Fleming, N. L. Abraham, P. Braesicke, J. B. Burkholder, J. S. Daniel, R.Dhomse, P. J. Fraser, S. C. Hardiman, C. H. Jackman, D. E. Kinnison, P. B. Krummel, S. A. Montzka, O. Morgenstern, A. McCulloch, J. Muhle, P. A. Newman, V. L. Orkin, G. Pitari, **R. G. Prinn**, M. Rigby, E. Rozanov, A. Stenke, F. Tummon, G. J. M. Velders, D. Visioni, R. F. Weiss, Deriving global OH abundance and atmospheric lifetimes for long-lived gases: A search for CH_3CCl_3 alternatives, *J. Geophys. Res. Atmos.,* 122, doi:10.1002/2017JD026926, 2017.

Wells, K. C., D. B. Millet, N. Bousserez, D. K. Henze, T. J. Griffis, S. Chaliyakunnel, E. J. Dlugokencky, E. Saikawa, G. Xiang, **R. G. Prinn**, S. O'Doherty, D. Young, R. F. Weiss, G. S. Dutton, J. W. Elkins, P. B. Krummel, R. Langenfelds, and L. P. Steele: Top-down constraints on global N_2O emissions at optimal resolution: application of a new dimension reduction technique, *Atmos. Chem. Phys.*, 18, 735-756, doi:10.5194/acp-18-735-2018, 2018.

Monier, E., S. Paltsev, A. Sokolov, H. Chen, X. Gao, Q. Ejaz, E. Couzo, A. Schlosser, S. Dutkiewicz, C. Fant, J. Scott, **R. Prinn**, and M. Haigh, Toward a consistent modeling framework to assess multi-sectoral climate impacts, *Nature Communications*, 9, 660, doi:10.1038/s41467-018-02984-9, 2018.

Vollmer, M. K., D. Young, C. M. Trudinger, J. Mühle, S. Henne, M. Rigby, S. Park, S. Li, M. Guillevic, B. Mitrevski, C. M. Harth, B. R. Miller, S. Reimann, B. Yao, L. P. Steele, S. A. Wyss, C. R. Lunder, J. Arduini, A. McCulloch, S. Wu, T. S. Rhee, R. H. J. Wang, P. K. Salameh, O. Hermansen, M. Hill, R. L. Langenfelds, D. Ivy, S. O'Doherty, P. B. Krummel, M. Maione, D. M. Etheridge, L. Zhou, P. J. Fraser, **R.G. Prinn**, R. F. Weiss, and P. G. Simmonds: Atmospheric histories and emissions of chlorofluorocarbons CFC-13 ($CClF_3$), ΣCFC-114 ($C_2Cl_2F_4$), and CFC-115 (C_2ClF_5), *Atmos. Chem. Phys.*, 18, 979-1002, doi:10.5194/acp-18-979-2018, 2018.

Brown-Steiner, B., N.E. Selin, **R.G. Prinn**, S. Tilmes, L. Emmons, J-F. Lamarque and P. Cameron- Smith, Evaluating Simplified Chemical Mechanisms within CESM Version 1.2 CAM-chem (CAM4): MOZART-4 vs. Reduced Hydrocarbon vs. Super-Fast Chemistry. *Geosci. Mod. Dev.*, 11(10), 4155-4174, doi: 10.5194/gmd-2018-16, 2018.

Prinn, R. G., R. F. Weiss, J. Arduini, T. Arnold, H. L. DeWitt, P. J. Fraser, A. L. Ganesan, J. Gasore, C. M. Harth, O. Hermansen, J. Kim, P. B. Krummel, S. Li, Z. M. Loh, C. R. Lunder, M. Maione, A. J. Manning, B. R. Miller, B. Mitrevski, J. Mühle, S. O'Doherty, S. Park, S. Reimann, M. Rigby, T. Saito, P. K. Salameh, R. Schmidt,P. G. Simmonds, L. P. Steele, M. K. Vollmer, R. H. Wang, B. Yao, Y. Yokouchi, D. Young, and L. Zhou: History of chemically and radiatively important atmospheric gases from the Advanced Global Atmospheric Gases Experiment (AGAGE), *Earth Syst. Sci. Data*, 10, 985-1018, 10.5194/essd-10-985-2018, 2018.

Brown-Steiner, B., N.E. Selin, **R. G. Prinn**, E. Monier, S. Tilmes, L. Emmons and F. Garcia-Menendez, Maximizing ozone signals among chemical, meteorological, and climatological variability, *Atmos. Chem. Phys.*, 18, 8373-8388, doi:10.5194/acp-18-8373-2018, 2018.

Simmonds, P. G., M. Rigby, A. McCulloch, M. K. Vollmer, S. Henne, J. Mühle, S. O'Doherty, A. Manning, P. B. Krummel, P. J. Fraser, D. Young, R. F. Weiss, P. K. Salameh, C. M. Harth, S. Reimann, C. M. Trudinger, L. P. Steele, R. H. J. Wang, D. J. Ivy, **R. G. Prinn**, B. Mitrevski, and D. M. Etheridge: Recent increases in the atmospheric growth rate and emissions of HFC-23 (CHF_3) and the link to HCFC-22 ($CHClF_2$) production, *Atmos. Chem. Phys.,* 18, 4153-4169, doi:10.5194/acp-18-4153-2018, 2018.

Sokolov, A., Kicklighter, D., Schlosser, A., Wang, C., Monier, E., Brown-Steiner, B., **Prinn, R.G.**, Forest, C., Xiang Gao, X., Libardoni, A. and Eastham, S., Description and Evaluation of the MIT Earth System Model (MESM). *J. Advances in Modeling Earth Systems*, 10(8), 1759-1789, doi:10.1029/2018MS001277, 2018.

Park, S., S. Li, J. Mühle, S. O'Doherty, R. F. Weiss, X. Fang, S. Reimann, and **R. G. Prinn**: Toward resolving the budget discrepancy of ozone-depleting carbon tetrachloride (CCl_4): An analysis of top-down emissions from China, *Atmos. Chem. Phys*., 18, 11729-11738, doi:10.5194/acp-18-11729-2018, 2018.

Fang, X., A. R. Ravishankara, G. J. M. Velders[||], M. J. Molina, Shenshen Su, J. Zhang, J. Hu and **R. G. Prinn**: Changes in emissions of ozone-depleting substances from China due to implementation of the Montreal Protocol, *Environmental Sci. & Tech.,* 52(19), 11359-11366, doi:10.1021/acs.est.8b01280, 2018.

Fang, X., T. Saito, S. Park, S. Li, Y. Yokouchi, and **R. G. Prinn**: Performance of back-trajectory statistical methods and inverse modeling method in locating emission sources. *ACS Earth and Space Chemistry,* 2(8), 843-851, doi:10.1021/acsearthspacechem.8b00062, 2018.

Lunt, M. F., S. Park, S. Li, S. Henne, A. J. Manning, A. L. Ganesan, I. J. Simpson, D. R. Blake, Q. Liang, S. O'Doherty, C.M. Harth, J. Mühle, P. K. Salameh, R. F. Weiss, P. B. Krummel, P. J. Fraser, **R. G. Prinn**, S. Reimann and M. Rigby, Continued emissions of the ozone-depleting substance carbon tetrachloride from Eastern Asia, *Geophys. Res. Lett.*, 45(20), 11,423-11,430, doi:10.1029/2018GL079500, 2018.

Rigby, M., S. Park, T. Saito, L.M. Western, A.L. Redington, X. Fang, S. Henne, A.J. Manning, **R.G. Prinn**, G.S. Dutton, P.J. Fraser, A.L. Ganesan, B.D. Hall, C.M. Harth, J. Kim, K.-R. Kim, P.B. Krummel, T. Lee, S. Li, Q. Liang, M. F. Lunt, S.A. Montzka, J. Mühle, S. O'Doherty, M.-K. Park, S. Reimann, P.K. Salameh, P. Simmonds, R.L. Tunnicliffe, R.F. Weiss, Y. Yokouchi, and D. Young: Increase in CFC-11 emissions from eastern China based on atmospheric observations, *Nature*, 569, 546-550, doi:10.1038/s41586-019-1193-4, 2019.

DeWitt, H. L., J. Gasore, M. Rupakheti, K. E. Potter, **R. G. Prinn**, J. de D. Ndikubwimana, J. Nkusi , and B. Safari: Seasonal and diurnal variability in O_3, black carbon, and CO measured at the Rwanda Climate Observatory, *Atmos. Chem. Phys.*, 19, 2063–2078, doi:10.5194/acp-19-2063-2019, 2019.

Sheng, J., S. Song, Y. Zhang, **R. G. Prinn**, and Janssens-Maenhout: Bottom-Up Estimates of Coal Mine Methane Emissions in China: A Gridded Inventory, Emission Factors, and Trends*, Environ. Sci. Technol. Lett*., 6(8), 473-478, doi:10.1021/acs.estlett.9b00294, 2019.

Yao, B., X. Fang, M. Vollmer, S. Reimann, C. Liqu, S. Fang, **R.G. Prinn**: China's hydrofluorcarbon emissions for 2011-2017 inferred from atmospheric measurements, *Environ. Sci. Technol. Lett*., 6(8): 479-486, doi:10.1021/acs.estlett.9b00319, 2019.

Mühle, J., C.M. Trudinger, M. Rigby, L.M. Western, M.K. Vollmer, S. Park, A.J. Manning, D. Say, A.L. Ganesan, D.J. Ivy, T. Arnold, S. Li, A. Stohl, C.M. Harth, P.K. Salameh, A. McCulloch, S. O'Doherty, M.-K. Park, C.O. Jo, D. Young, L.P. Steele, P.B. Krummel, B. Mitrevski, N. Schmidbauer, C. Lunder, N. Evangeliou, J. Kim, B. Hmiel, C. Buizert, V. Petrenko, J. Arduini, M. Maione, D.M. Etheridge, E. Michalopoulou, M. Czerniak, J. Severinghaus, S. Reiman, P.G. Simmonds, P.J. Fraser, **R.G. Prinn**, and R.F. Weiss, Perfluorocyclobutane (PFC-318, *c*-C_4F_8) in the global atmosphere, *Atmos. Chem. Phys*., 19, 10335-10359, doi:10.5194/acp-19-10335-2019, 2019.

Fang, X., Park, S., Saito, T., Tunnicliffe, R., Ganesan, A. L., Rigby, M., Li, S., Yokouchi, Y., Fraser, P. J., Harth, C. M., Krummel, P. B., Mühle, J., O'Doherty, S., Salameh, P. K., Simmonds, P. G., Weiss, R. F., Young, D., Lunt, M. F., Manning, A. J., Gressent, A., and **Prinn, R. G**. Rapid increase in ozone-depleting chloroform emissions from China. *Nature Geoscience*, 12(2), 89-93, doi:10.1038/s41561-018-0278-2, 2019.

Fang, X., Yao, B., Vollmer, M. K., Reimann, S., Liu, L., Chen, L., **R.G. Prinn**, and J. Hu, Changes in HCFC emissions in China during 2011–2017, *Geophysical Research Letters*, 46, 10,034–10,042, doi:10.1029/2019GL083169, 2019.

Fang, X., J.A. Pyle, M.P.Chipperfield, J.S. Daniel, S. Park, and **R. G. Prinn**, Challenges for the recovery of the ozone layer, *Nat. Geosci.* 12, 592–596, doi:10.1038/s41561-019-0422-7, 2019.

Andersson, A., E.N. Kirillova, S. Decesari, L. DeWitt, J. Gasore, K. E. Potter, **R. G. Prinn**, M. Rupakheti, J. de Dieu Ndikubwimana, J. Nkusi, and B. Safari : Seasonal source variability of carbonaceous aerosols at the Rwanda Climate Observatory, *Atmos. Chem. Phys*., 20, 4561–4573, doi:10.5194/acp-20-4561-2020, 2020.

Tian, H., R. Xu, J. G. Canadell, R. L. Thompson, W. Winiwarter, P. Suntharalingam, E. A. Davidson, P. Ciais, R. B. Jackson, G. Janssens-Maenhout, M. JPrather, P. Regnier, N. Pan, S. Pan, G. P. Peters, H. Shi, F. N. Tubiello, S. Zaehle, F. Zhou, A. Arneth, G. Battaglia, S. Berthet, L. Bopp, A. F. Bouwman, E. T. Buitenhuis, J. Chang, M. P. Chipperfield, S. R. S. Dangal, E. Dlugokencky, J. W. Elkins, B. D. Eyre, B. Fu1, B. Hall, A. Ito, F. Joos, P. B. Krummel, A. Landolfi, G. G. Laruelle, R. Lauerwald, W. Li, S. Lienert, T. Maavara, M. MacLeod, D. B. Millet, S. Olin, P. K. Patra, **R. G. Prinn**, P. A. Raymond, D. J. Ruiz, G. R. van der Werf, N. Vuichard, J. Wang, R. F. Weiss, K. C. Wells, C. Wilson, J. Yang and Y. Yao: A comprehensive quantification of global nitrous oxide sources and sinks, *Nature*, 586, 248-256, doi:10.1038/s41586-020-2780-0, 2020.

Patra, P.K., M. C. Krol, **R. G. Prinn**, M. Takigawa, J. Mühle, S. A. Montzka, S. Lal, Y. Yamashita, S. Naus, N. Chandra, R. F. Weiss, P. B. Krummel, P. J. Fraser, S. O'Doherty and J. W. Elkins: Methyl Chloroform continues to constrain the hydroxyl (OH) variability in the troposphere. *J. Geophys. Res. – Atmos.*, Online first, doi:10.1029/2020JD033862, 2020.

Saunois, M., A. R. Stavert, B. Poulter, P. Bousquet, J.G. Canadell, R.B. Jackson, P.A. Raymond, E.J. Dlugokencky, S. Houweling, P.K. Patra, P. Ciais, V.K. Arora, D. Bastviken, P. Bergamaschi, D.R. Blake, G. Brailsford, L. Bruhwiler, K.M. Carlson, M. Carrol, S. Castaldi, N. Chandra, C. Crevoisier, P.M. Crill, K. Covey, C.L. Curry, G. Etiope, C. Frankenberg, N. Gedney, M.I. Hegglin, L. Höglund-Isaksson, G. Hugelius, M. Ishizawa, A. Ito, G. Janssens-Maenhout, K.M. Jensen, F. Joos, T. Kleinen, P.B. Krummel, R.L. Langenfelds, G.G. Laruelle, L. Liu, T. Machida, S. Maksyutov, K.C. McDonald, J. McNorton, P.A. Miller, J.R. Melton, I. Morino, J. Müller, F. Murguia-Flores, V. Naik, Y. Niwa, S. Noce, S. O'Doherty, R.J. Parker, C. Peng, S. Peng, G.P. Peters, C. Prigent, **R. Prinn,** M. Ramonet, P. Regnier, W.J. Riley, J.A. Rosentreter, A. Segers, I.J. Simpson, H. Shi, S.J. Smith, L.P. Steele, B.F. Thornton, H. Tian, Y. Tohjima, F.N. Tubiello, A. Tsuruta, N. Viovy, A. Voulgarakis, T.S. Weber, M. van Weele, G.R. van der Werf, R.F. Weiss, D. Worthy, D. Wunch, Y. Yin, Y. Yoshida, W. Zhang, Z. Zhang, Y. Zhao, B. Zheng, Q. Zhu, Q. Zhu and Q. Zhuang (2020): The Global Methane Budget 2000–2017, *Earth Syst. Sci. Data*, 12, 1561–1623, doi:10.5194/essd-12-1561-2020, 2020.

Simmonds, P. G., M. Rigby, A. J. Manning, S. Park, K.M. Stanley, A. McCulloch, S. Henne, F. Graziosi, M. Maione, J. Arduini, S. Reimann, M. K. Vollmer, J Mühle, S. O'Doherty, D. Young, P. B. Krummel, P. J. Fraser, R. F. Weiss, P. K. Salameh, C. M. Harth, M-K Park, H. Park, T. Arnold, C. Rennick, L. P. Steele, B. Mitrevski, R. H. Wang and **R. G. Prinn**: The increasing atmospheric burden of the greenhouse gas sulfur hexafluoride (SF_6), *Atmos. Chem. Phys*., 20: 7271-7290, doi:10.5194/acp-20-7271-2020, 2020.

Stanley, K.M., D. Say, J. Mühle, C.M. Harth, P.B. Krummel, D. Young, S.J. O'Doherty, P.K. Salameh, P.G. Simmonds, R.F. Weiss, **R.G. Prinn**, P.J. Fraser, M. Rigby. Increase in global emissions of HFC-23 despite near-total expected reductions, *Nature Communications* 11, 397, doi: 10.1038/s41467-019-13899-4, 2020.

Gressent, A.; Rigby, M.; Ganesan, A. L.; **Prinn, R. G.**; Manning, A. J.; Mühle, J.; Salameh, P. K.; Krummel, P. B.; Fraser, P. J.; Steele, L. P.; Mitrevski, B.; Weiss, R. F.; Harth, C. M.; Wang, R. H.; O'Doherty, S.; Young, D.; Park, S.; Li, S.; Yao, B.; Reimann, S.; Vollmer, M. K.; Maione, M.; Arduini, J.; Lunder, C. R. Growing Atmospheric Emissions of Sulfuryl Fluoride. *Journal of Geophysical Research: Atmospheres* 126, no. 9. https://doi.org/10.1029/2020JD034327, 2021.

Lickley, M., S. Solomon, D. Kinnison, P. Krummel, J. Mühle, S. O'Doherty, R. Prinn, M. Rigby, K. A. Stone, P. Wang, R. Weiss, D. Young, Quantifying the imprints of stratospheric contributions to interhemispheric differences in tropospheric CFC-11, CFC-12, and N2O abundances, *Geophys. Res. Lett*., 48, e2021GL093700. https://doi.org/10.1029/2021GL093700 , 2021.

An, M., L.M. Western, D. Say, L. Chen, T. Claxton, A. L. Ganesan, R. Hossaini, P.B. Krummel, A.J. Manning, J. Mühle, S. O'Doherty, **R. G. Prinn,** R. F. Weiss, D. Young, J. Hu, B. Yao, and M.Rigby, Rapid increase in dichloromethane emissions from China inferred through atmospheric observations. *Nature Commun.* **12,** 7279 https://doi.org/10.1038/s41467-021-27592-y, 2021

Montzka, S.A., G. S. Dutton, R. W. Portmann, M. P. Chipperfield, S. Davis, W. Feng, A. J. Manning, E. Ray, M. Rigby, B. D. Hall, C. Siso, J. D. Nance, P. B. Krummel, J. Mühle, S. O'Doherty, P.K. Salameh, **R. G. Prinn**, R. F. Weiss, J. W. Elkins, H. Walter-Terrinoni, C. Theodoridi, A decline in recently enhanced Global CFC-11 emission, *Nature*, 590 (7846), https://doi.org/10.1038/s41586-021-03260-5, 2021, 2021.

Park, S., L. M. Western, T. Saito, A. L. Redington, S. Henne, X. Fang, **R. G. Prinn**, A. J. Manning, S. A. Montzka , P. J. Fraser, A. L. Ganesan, C. M. Harth, J. Kim, P. B. Krummel, Q. Liang, J. Mühle, S. O'Doherty, H. Park, M-K Park, S. Reiman, P. K. Salameh, R. F. Weiss and M. Rigby, A decline in emissions of CFC-11 and related chemicals from eastern China, *Nature,* 590, 433–437, https://doi.org/10.1038/s41586-021-03277-w , 2021

Patra, P. K., M. C. Krol, **R. G. Prinn**, M.Takigawa, J. Mühle, S. A Montzka, et al., Methyl chloroform continues to constrain the hydroxyl (OH) variability in the troposphere. *Journal of Geophysical Research: Atmospheres*, 126, e2020JD033862. https://doi.org/10.1029/2020JD033862, 2021

Say, D., A. J. Manning, L.M. Western, D. Young, A. Wisher, M. Rigby, S. Reimann, M. K. Vollmer, M. Maione, J. Arduini, P. B. Krummel, J. Mühle, C. M. Harth, B. Evans, R. F. Weiss, **R. G. Prinn**, and S. O'Doherty: Global trends and European emissions of tetrafluoromethane (CF_4), hexafluoroethane (C_2F_6) and octafluoropropane (C_3F_8), *Atmos. Chem. Phys.*, doi:10.5194/acp-2020-937, 2021.

Sheng, J., R. Tunnicliffe, A. L Ganesan, J. D. Maasakkers, L. Shen**, R. G. Prinn**, S. Song, Y. Zhang, T. Scarpelli, A. A. Bloom, M. Rigby, A. J. Manning, R. J. Parker, H. Boesch, X. Lan, B. Zhang, M. Zhuang and X. Lu, Sustained methane emissions from China after 2012 despite declining coal production and rice-cultivated area, *Environ. Res. Lett.,* 16 104018, 2021. http://dx.doi.org/10.1088/1748-9326/ac24d1

Vollmer, M. K., J. Mühle, S. Henne, D. Young, M. Rigby, Blagoj Mitrevski, S. Park, C. R. Lunder, B. Yao, T. S. Rhee, C. M. Harth, M. Hill, R. L. Langenfeld, M. Guillevic, P. M. Schlauri, O. Hermansen, J. Arduini, R. H. J. Wang, P. K. Salameh, M. Maione, P. B. Krummel, S. Reimann, S. O'Doherty, P. G. Simmonds, P. J. Fraser, **R. G. Prinn**, R. F. Weiss, and L. P. Steele, Unexpected nascent atmospheric emissions of three ozone-depleting hydrochlorofluorocarbons, *Proc. Nat. Acad. Sci*., 118 (5) e2010914118; doi:10.1073/pnas.2010914118, 2021.

Wang, P., J. R. Scott, S. Solomon, J. Marshall, A. R. Babbin, M. Lickley, D. W. J. Thompson, T. DeVries, Q. Liang, and **R. G. Prinn**, On the effects of the ocean on atmospheric CFC-11 lifetimes and emissions, *Proceedings of the National Academy of Science*, 118 (12) e2021528118; DOI: https://doi.org/10.1073/pnas.2021528118, 2021

Eastham, S. D., T. Fritz, I. Sanz-Morere, P. Prashanth, F. Allroggen, **R. G. Prinn**, R. L. Speth and S. R. H. Barrett, Impacts of a near-future supersonic aircraft fleet on atmospheric composition and climate, *Environ. Sci.: Atmos.*, Advance Article, DOI **https://doi.org/10.1039/D1EA00081K,** 2022.

Mühle, J., L. J. M. Kuijpers, K. M. Stanley, M. Rigby, L. M. Western, J. Kim, S. Park, C. M. Harth, P. B. Krummel, P. J. Fraser, S. O'Doherty, P. K. Salameh, R. Schmidt, D. Young, **R. G. Prinn,** R. H. J. Wang, and R. F. Weiss, Global emissions of perfluorocyclobutane (PFC-318, c-C4F8) resulting from the use of hydrochlorofluorocarbon-22 (HCFC-22) feedstock to produce polytetrafluoroethylene (PTFE) and related fluorochemicals, *Atmos. Chem. Phys*., 22, 3371–3378, https://doi.org/10.5194/acp-22-3371-2022.

Patra, P. K., E. J. Dlugokencky, J, W. Elkins, G. S. Dutton, Y. Tohjima, M. Sasakawa, A. Ito, R. F. Weiss, M. Manizza, P. B. Krummel, **R. G. Prinn**, S. O'Doherty, D. Bianchi, C. Nevison, E. Solazzo, H. Lee, S. Joo, E. A. Kort, S. Maity, M. Takigawa, Forward and inverse modelling of atmospheric nitrous oxide using MIROC4-Atmospheric Chemistry-Transport Model, *J. Meteorol. Soc. Jpn.*, 100, no. 2: 361-386, https://doi.org/10.2151/jmsj.2022-018 2022.

Velders, G. J. M., Daniel, J. S., Montzka, S. A., Vimont, I., Rigby, M., Krummel, P. B., Muhle, J., O'Doherty, S., **Prinn, R. G.,** Weiss, R. F., and Young, D.: Projections of hydrofluorocarbon (HFC) emissions and the resulting global warming based on recent trends in observed abundances and current policies, *Atmos. Chem. Phys.*, 22, 6087–6101, https://doi.org/10.5194/acp-22-6087-2022, 2022.

Western, L. M., Redington, A. L., Manning, A. J., Trudinger, C. M., Hu, L., Henne, S., Fang, X., Kuijpers, L. J. M., Theodoridi, C., Godwin, D. S., Arduini, J., Dunse, B., Engel, A., Fraser, P. J., Harth, C. M., Krummel, P. B., Maione, M., Mühle, J., O'Doherty, S., Park, H., Park, S., Reimann, S., Salameh, P. K., Say, D., Schmidt, R., Schuck, T., Siso, C., Stanley, K. M., Vimont, I., Vollmer, M. K., Young, D., **Prinn, R. G.,** Weiss, R. F., Montzka, S. A., and Rigby, M.: A renewed rise in global HCFC-141b emissions between 2017–2021, *Atmos. Chem. Phys*., 22, 9601–9616, https://doi.org/10.5194/acp-22-9601-2022,

Müller R., **Prinn, R.G**. (contributor): *Memoir of Paul Jozef Crutzen*. 3 December 1933—28 January 2021, *Biogr. Mems Fell. R. Soc.*http://doi.org/10.1098/rsbm.2022.0011, 2022.

Kirago, Leonard, Örjan Gustafsson, Samuel M. Gaita, Sophie L. Haslett, H. Langley deWitt, Jimmy Gasore, Katherine E. Potter, **Ronald G. Prinn**, Maheswar Rupakheti, Jean de Dieu Ndikubwimana, Bonfils Safari, and August Andersson, "Atmospheric Black Carbon Loadings and Sources over Eastern Sub-Saharan Africa Are Governed by the Regional Savanna Fires, *Environmental Science & Technology* **2022** *56* (22), 15460-15469. DOI: 10.1021/acs.est.2c05837

Stell, A. C., Bertolacci, M., Zammit-Mangion, A., Rigby, M., Fraser, P. J., Harth, C. M., Krummel, P. B., Lan, X., Manizza, M., Mühle, J., O'Doherty, S., **Prinn, R. G**., Weiss, R. F., Young, D., and Ganesan, A. L.: Modelling the Growth of Atmospheric Nitrous Oxide Using a Global Hierarchical Inversion, *Atmos. Chem. Phys.,* 22, 12945–12960, https://doi.org/10.5194/acp-22-12945-2022, 2022.

Park, H., Kim, J., Choi, H., Geum, S., Kim, Y., Thompson, R. L., Mühle, J., Salameh, P. K., Harth, C. M., Stanley, K. M., O'Doherty, S., Fraser, P. J., Simmonds, P. G., Krummel, P. B., Weiss, R. F., **Prinn, R. G**., and Park, S.: A rise in HFC-23 emissions from eastern Asia since 2015, *Atmos. Chem. Phys*., 23, 9401–9411, https://doi.org/10.5194/acp-23-9401-2023, 2023.

Chen, A., Chen, D., Hu, X., Harth, C. M., Young, D., Mühle, J., Krummel, P. B., O'Doherty, S., Weiss, R. F., **Prinn, R. G**., & Fang, X. (2023). Historical trend of ozone-depleting substances and hydrofluorocarbon concentrations during 2004–2020 derived from satellite observations and estimates for global emissions. *Environmental Pollution*, 316(3), 120570. https://doi.org/10.1016/j.envpol.2022.120570 , 2023.

Thompson, R. L., Montzka, S. A., Vollmer, M. K., Arduini, J., Crotwell, M., Krummel, P. B., Lunder, C., Mühle, J., O'Doherty, S., **Prinn, R. G**., Reimann, S., Vimont, I., Wang, H., Weiss, R. F., and Young, D.: Estimation of the atmospheric hydroxyl radical oxidative capacity using multiple hydrofluorocarbons (HFCs), *Atmos. Chem. Phys*., 24, 1415–1427, https://doi.org/10.5194/acp-24-1415-2024, 2024

2. MEETING PROCEEDINGS, PUBLISHED ABSTRACTS, AND PROJECT REPORTS

Prinn, R.G., Analysis of limb darkening scans of Jupiter, *Trans. Amer. Geophys. Union*, **51**, 771, 1970.

Prinn, R.G., Structural and compositional models for the Jovian atmosphere and clouds, in *Geophysical Fluid Dynamics: Notes on Summer Study Program*, Woods Hole Oceanographic Institute, Ref. No. 71-63. Vol 1, 96–98, 1971.

Prinn, **R.G.** and Lewis, J.S. The atmosphere of Uranus, *Bull. Amer. Astron. Soc.*, **4**, 361, 1972.

Prinn, R.G., The atmospheres of Uranus and Neptune: brief review, in *Proceedings of the NATO Advanced Study Institute on Planetary Atmospheres*, Institute of Geophysics, Univ. of Istanbul, Istanbul, Turkey, 100– 102, 1972.

Pilcher, C., T. McCord, and **R.G. Prinn**, Spectroscopy of Jupiter: 3200–11200 A, *Bull. Amer. Astron. Soc.*, **4**, 361, 1972.

Prinn, R.G., A photochemical haze model for the clouds of Venus, *Bull. Amer. Astron. Soc.*, **5**, 300, 1973. Cunnold, D.M., F.N. Alyea, N.A. Phillips, and **R.G. Prinn**, A general circulation model of stratospheric ozone, *Amer. Inst. Aero. Astro.* Paper No. 73-529, 1–7, 1973.

Prinn, R.G., Stratospheric haze layers on Jupiter, *Bull. Amer. Astron. Soc.*, **6**, 375–376, 1974.

Cunnold, D.M., F.N. Alyea, N.A. Phillips, and **R.G. Prinn**, A general circulation model of stratospheric ozone, in *Proceedings of the International Conference on Structure, Composition, and General Circulation of the Upper and Lower Atmosphere and Possible Anthropogenic Perturbations*, Int. Assoc. of Met. and Atmos. Phys.; Atmos. Environ. Service; Downsview, Ontario, Canada, pp. 932–970, 1974.

Prinn, R.G., F.N. Alyea, D.M. Cunnold, and A. Katz, The distributions of odd nitrogen and odd hydrogen in the natural and perturbed stratosphere, in *Second International Conference on the Environmental Impact of Aerospace Operations in the High Atmosphere*, Amer. Meteor. Soc., Boston, pp. 180–186, 1974.

Cunnold, D.M., F.N. Alyea, N. Phillips, and **R.G. Prinn**, First results of a general circulation model applied to the SST-NO_x problem, in *Second International Conference on the Environmental Impact of Aerospace Operations in the High Atmosphere*, Amer. Meteor. Soc., Boston, pp. 187–193, 1974.

Prinn, **R.G.** and Lewis, J.S. Photochemistry of phosphine in the atmospheres of Jupiter and Saturn, *Bull. Amer. Astron. Soc.*, **7**, 381, 1975.

Cunnold, D.M., F.N. Alyea, and **R.G. Prinn**, The ozone distribution above 10 mb in winter, in *Proceedings of the International Symposium on Ozone*, Dresden, West Germany, pp. 333–355, 1976.

Prinn, **R.G.** and Barshay, S. Carbon monoxide on Jupiter and implications for atmospheric convection, *Bull.Amer. Astron. Soc.*, **9**, 475, 1977.

Prinn, R.G., Chemistry and photochemistry of the Jovian atmosphere, *Proceedings: Symposium on Planetary Atmospheres*, Royal Soc. of Canada, Ottawa, 103–104, 1977.

Prinn, R.G., Atmospheric chemistry, in *McGraw Hill Encyclopedia of Science and Technology*, Fourth Edition, Vol. 1, pp. 685–686B, 1977.

Prinn, R.G., Atmospheric ozone, in *McGraw Hill Encyclopedia of Science and Technology*, Fourth Edition, Vol. 9, pp. 542–543B, 1977.

Prinn, R.G., Venus: chemistry of the lower atmosphere prior to the Pioneer Venus Mission, *Bull. Amer. Astron. Soc.*, **10**, 544, 1978.

Prinn, R.G., Sulfur chemistry in the lower atmosphere of Venus, *Bull. Amer. Astron. Soc.*, **11**, 538–539, 1979.

Counselman, C., S. Gourevitch, R. King, G. Loriot, and **R.G. Prinn**, Winds in the lower atmosphere of Venus, *Bull. Amer. Astron. Soc.*, **11**, 548, 1979.

Prinn, R.G., Chemistry of the atmosphere of Venus, *Trans. Amer. Geophys. Union*, **61**, 965, 1980.

Prinn, R.G., Planetary atmospheres, in *McGraw Hill Yearbook of Science and Technology*, 300–303, 1981.

Prinn, R.G., Atmospheric chemistry, in *McGraw Hill Encyclopedia of Science and Technology*, Fifth Edition, Vol. 1, pp. 817–821, 1981.

Prinn, R.G., Atmospheric ozone, in *McGraw Hill Encyclopedia of Science and Technology*, Fifth Edition, Vol. 1, pp. 831–834, 1981.

Carroll, M., L. Heidt, R. Cicerone, and **R.G. Prinn**, Carbonyl sulfide fluxes from a salt-water marsh, *Trans.Amer. Geophys. Union*, **63**, 893, 1982.

Fegley, B., **R.G. Prinn**, and H. Hartman, Effects of large impacts on evolution of the Earth's earliest atmosphere, *Trans. Amer. Geophys. Union*, **63**, 1018, 1982.

Fegley, B. and **R.G. Prinn**, Chemical probes of Saturn's deep atmosphere, *Lunar and Planetary Science*, **14**, 189– 190, 1983.

Hartman, H., **R.G. Prinn**, B. Fegley, and J. Lewis, Organic molecules and carbonaceous chondrites, *Lunar and Planetary Science*, **14**, 279–280, 1983.

Prinn, R.G., Volcanoes and the clouds of Venus, *Bull. Amer. Astron. Soc.*, **16**, 696, 1984.

Prinn, R.G., Atmospheric chemistry: a global perspective, *Trans. Amer. Geophys. Union*, **60**, 233, 1985.

Prinn, R.G., Impacts, acid rain, and biospheric traumas, *Trans. Amer. Geophys. Union*, **66**, 813, 1985.

Prinn, R.G., The global biogeochemical system, *Trans. Amer. Geophys. Union*, **66**, 814, 1985.

Fegley, B., **R.G. Prinn**, and H. Hartman, Chemical processing of the Earth's earliest atmosphere by large impacts, *Meteoritics*, **20**, 644–645, 1985.

Prinn, R.G., Book review of *Physical Meteorology*, by H.G. Houghton, the M.I.T. Press, 1985, in *Pageoph.,***123**, 497-498, 1985.

Fegley, B. and **R.G. Prinn**, Predicted chemical models of the deep atmosphere of Uranus, *Lunar and Planetary Science*, **22**, 222–223, 1986.

Fegley, B. and **R.G. Prinn**, Vertical mixing of non-equilibrium trace gases from the deep atmosphere of Uranus, *Trans. Amer. Geophys. Union*, **67**, 342, 1986.

Fegley, B. and **R.G. Prinn**, Predicted abundances of deuterated compounds and the D/H ratio in the atmospheres of Jupiter and Saturn, *Bull. Amer. Astron. Soc.*, **28**, 780, 1986.

Fegley, B. and **R.G. Prinn**, Chemical models of impact-generated atmospheres on the early Earth, *Trans. Amer. Geophys. Union*, **68**, 1337, 1987.

Olaguer, E. and **R.G. Prinn**, On the possibility of reverse circulations in the spring Antarctic lower stratosphere, *Trans. Amer. Geophys. Union*, **68**, 1398, 1987.

Prinn, R.G., After the fall: effects of large impacts on the atmosphere and biosphere, *Amer. Assn. Advan. Sci.*, Publ. 87-30, 12–13, 1988.

Fegley, B. and **R.G. Prinn**, Oxygen production by large impacts into the Earth's early atmosphere, in *Proceedings: Conference on the Origin of the Earth*, Lunar and Planetary Institute Contribution No. 681, Houston, pp. 18–19, 1988.

Donahue, N. and **R.G. Prinn**, Non-methane hydrocarbons and hydroxyl in the remote marine boundary layer, *Trans. Amer. Geophys. Union*, **69**, 1072, 1988.

Prinn, **R.G.** and Fegley, B., Chemical interactions between the present-day Martian atmosphere and surface minerals: implications for sample return, in *Proceedings: Mars Sample Return Science Workshop*, Lunar and Planetary Institute Technical Report 88-07, Houston, pp. 141, 1988.

Prinn, **R.G.** and Fegley, B., Biospheric traumas caused by large impacts and predicted relics in the sedimentary record, in *Proceedings: Snowbird Conference on Global Catastrophes in Earth History*, Lunar and Planetary Institute Contribution No. 673, Houston, pp. 145, 1988.

Prinn, **R.G.** and Fegley, B., Chemical interactions between the present-day Martian atmosphere and surface minerals, in *METV Workshop on the Nature and Composition of Surface Units on Mars*, Lunar and Planetary Institute Technical Report 88-05, pp. 105, 1988.

Prinn, R.G., Atmosphere, oceans, cryosphere, and pedosphere: a global view, *Trans. Amer. Geophys. Union*,**70**, 279, 1989.

Sprengnether, M. and **R.G. Prinn**, Assessment of the feasibility of tropospheric field measurement of local hydroxyl radical concentrations by an active titration method, *Trans. Amer. Geophys. Union*, **70**, 288, 1989.

Prinn, **R.G.** and Fegley, B., Atmosphere-surface interactions on Venus and Mars, *Trans. Amer. Geophys.Union*, **70**, 387–388, 1989.

Prinn, R.G., Solar nebula mixing and the origin of ice-rich satellites and comets, *Bulletin Amer. Astron. Soc.*, **21**, 914, 1989.

Donahue, N., **R.G. Prinn**, J. Johnson, K. Kelly, A. Torres, and A. Shashkov, Nonmethane hydrocarbon measurements during SAGA III, *Trans. Amer. Geophys. Union*, **71**, 1230, 1990.

Prinn, R.G., Terrestrial environmental effects of large impacts: a review, *Trans. Amer. Geophys. Union*, **71**, 1425–1426, 1990.

Prinn, R.G., Atmosphere, oceans, and land: AGU Planet Earth Committee Report, *Trans. Amer. Geophys.*
Union, **71**, 1855–1857, 1990.

Sprengnether, M. and **R.G. Prinn**, The feasibility of measuring local tropospheric hydroxyl radical concentrations by an active titration method: field and laboratory results, *Trans. Amer. Geophys. Union*, **72**, 100, 1991.

Hartley, D.E. and **R.G. Prinn**, Deducing trace gas emissions using an inverse method in a three-dimensional chemical transport model, *Trans. Amer. Geophys. Union*, **72**, 102, 1991.

Shi, X., J. Graham, and **R.G. Prinn**, Nonmethane hydrocarbon measurements during IGAC/MAGE, *Trans. Amer. Geophys. Union*, **73**, 81, 1992.

Prinn, **R.G.** and Hartley, D., Inverse Modeling in Atmospheric Chemistry, *Trans. Amer. Geophys. Union*, **73**, 93, 1992.

Cunnold, D.M., **R.G. Prinn**, F.N. Alyea, P.J. Fraser, R.F. Weiss, and P.G. Simmonds, Global emissions estimates for the CFCs based on ALE/GAGE and other measurements, *Trans. Amer. Geophys. Union*, **73**, 93, 1992.

Hartley, D.E. and **R.G. Prinn**, Deducing trace gas emissions using the Kalman filter in NCAR's CCM2, *Trans. Amer. Geophys. Union*, **73**, 93, 1992.

Hartley, D.E. and **R.G. Prinn**, Validating NCAR's CCM2 Chemical Transport using a simulation of CFC-11 and comparing to ALE/GAGE observations, *Trans. Amer. Geophys. Union*, **73**, 61, 1992.

Prinn, R.G., Hot questions, cool answers, *The World Paper*, World Times, Inc., Boston, April 1993, 10– 11, 1993.

Prinn, R.G., R.F. Weiss, F.N. Alyea, D.M. Cunnold, P.J. Fraser, L. Steele, and P.G. Simmonds, Advanced Global Atmospheric Gases Experiment (AGAGE), in *Climate Monitoring and Diagnostics Laboratory Summary Report 1992*, ed. J. Peterson and R. Rosson; Report 21, NOAA/ERL, Boulder, CO, pp. 108–109,1993.

Prinn, R.G., Global atmospheric-biospheric chemistry, in *Global Change of Planet Earth, OECD MegaScience Forum Series*, Paris, pp. 48–54, 1994.

Prinn, R.G., Planetary atmospheres: Three decades of exploration, *Trans. Amer. Geophys. Union*, **75**, 51, 1994.

Prinn, R.G., P. Liss, and P. Buat-Menard, Biogeochemical ocean-atmosphere transfers., *JGOFS Report No. 14*, Scientific Committee on Oceanic Research, Johns Hopkins University, Baltimore, 14 pgs., 1994.

Prinn, R.G., Global change: problems and uncertainties, in *Proceedings of the International Symposium on Climate Change and Rice*, International Rice Research Institute, Manila, 1994.

Wang, C., **R.G. Prinn**, A. Sokolov, and P. Stone, Preliminary results of a coupled biogeochemistry-global circulation climate model: evolution of the zonal-averaged distribution of $CFCl_3$, *Trans. Amer. Geophys. Union*, **75**, 136, 1994.

Miller, B.R., **R.G. Prinn**, R.F. Weiss, P.J. Fraser, and J. Huang, Trend in HCFC-22 at Cape Grim, Tasmania (1978–present) and variations in HCFC-22, CH_3Br, CH_3Cl_3, andCFC-12 at La Jolla, California, *Trans. Amer. Geophys. Union*, **75**, 141, 1994.

Graham, J., X. Shi, and **R.G. Prinn**, Non-methane hydrocarbon measurements in a subtropical forest during a rainy period, *Trans. Amer. Geophys. Union*, **75**, 145, 1994.

Jacoby, H. and **R.G. Prinn**, Uncertainty in climate change policy analysis, MIT Joint Program on the Science and Policy of Global Change Report No. 1, 34 pgs., 1994.

Pszenny, A. and **R.G. Prinn**, ed., International Global Atmospheric Chemistry (IGAC) Project: The operational Plan. International Geosphere-Biosphere Program, Report 32, Stockholm, 134 pgs., 1994.

Prinn, R.G., R.F. Weiss, F.N. Alyea, D.M. Cunnold, P.J. Fraser, P.G. Simmonds, A. Crawford, R. Rasmussen, and R.D. Rosen, Atmospheric CFC-11 (CCl_3F), CFC-12 (CCl_2F_2), and N_2O from the ALE/GAGE Network, in *Trends '93: A Compendium of Data on Global Change*, eds. T. Boden, D. Kaiser, R. Sepanski, F. Stoss, Pub. No. ORNL/CDIAC-65, Oak Ridge TN, pp. 396–420, 1994.

Prinn, R.G., R.F. Weiss, F.N. Alyea, D.M. Cunnold, P.J. Fraser, P. Steele, and P.G. Simmonds, Advanced Global Atmospheric Gases Experiment (AGAGE), in *Climate Monitoring and Diagnostics Laboratory Summary Report 1993*, eds. J. Peterson, R. Rosson, Report 22, NOAA/ERL, Boulder, CO, pp. 135–136,1994.

Prinn, R.G., Fraser, P.J., R.F. Weiss, B.R. Miller, D.M. Cunnold, F.N. Alyea, D.E. Hartley, and P.G. Simmonds, Global observations of halocarbons restricted under the Montreal Protocol, *Trans. Amer. Geophys. Union*,**76**, F107, 1995.

Huang, J., **R.G. Prinn**, P.J. Fraser, R.F. Weiss, and B.R. Miller, Optimal determination of global tropospheric OH concentrations using combined $CH_3CCl_3$and CHF_2Cl data, *Trans. Amer. Geophys. Union*, **76**, F68, 1995.

Mahowald, N.M., P.J. Rasch, and **R.G. Prinn**, Trace gas transport in a global chemical transport model basedon observed winds, *Trans. Amer. Geophys. Union*, **76**, F122, 1995.

Fraser, P.J., N. Derek, R. Langenfelds, L. Porter, R.F. Weiss, B.R. Miller, P.G. Simmonds, F.N. Alyea, D.M. Cunnold, and **R.G. Prinn**, ALE/GAGE global halocarbon measurements and the Montreal Protocol*, World Meteorological Org. Report WMO/TD-No. 710*, 225–229, 1995.

Wang, C., **R.G. Prinn**, A.P. Sokolov, P.H. Stone, Y. Liu, and X. Xiao, A coupled atmospheric chemistry and climate model for chemically and radiatively important trace species, *World Meteorological Org. Report WMO/TD-No. 710*, 182–184, 1995.

Liu, Y., **R.G. Prinn,** C. Li, X. Xiao, and A. Sokolov, An interactive transient global emission model for nitrous oxide (N_2O), *World Meteorological Org. Report WMO/TD-No. 710*, 205–208, 1995.

Prinn, **R.G.**, Jacoby, H., A. Sokolov, C. Wang, X. Xiao, Z. Yang, R. Eckaus, P. Stone, D. Ellerman, J. Melillo, J. Fitzmaurice, D. Kicklighter, Y. Liu, and G. Holian, Integrated global system model for climate policy analysis: I. Model framework and sensitivity studies, MIT Joint Program on the Science and Policy of Global Change Report No. 7, 76 pgs., 1996.

Hartley, D.E. and **R.G. Prinn**, ALE/GAGE observations of $CFCl_3$ as a test for three-dimensional tracer models, in *Global Tracer Transport Models*, ed. J. Pyle and M. Prather, World Met. Org. Report No. 24/TD No. 770, pgs. 8–22, 1996.

Jacoby, H.D., R. S. Eckaus, A.D. Ellerman, **R.G. Prinn**, D.M. Reiner, and Z. Yang, QELRO impacts: domestic markets, trade and distribution of burdens, and climate change, MIT Joint Program on the Science and Policy of Global Change Report No. 9, 16 pgs., 1996.

Kleiman, G., **R.G. Prinn**, A. Pszenny, A. Deshpande, and X. Shi, Oceanic and atmospheric hydrocarbon measurements and sea-air fluxes during ACE-1, *Trans. Amer. Geophys. Union*, **77**, F75, 1996.

Prinn, **R.G.,** Kleiman, G., A. Pszenny, A. Deshpande, and X. Shi, Significant influences of atmospheric transport and oceanic emissions on hydrocarbons observed during ACE-1, *Trans. Amer. Geophys. Union*, **77**, F76, 1996.

Wang, C. and **R.G. Prinn**, Impact of horizontal wind profiles on the convective transport of chemical species, *Trans. Amer. Geophys. Union*, **77**, F83, 1996.

Calbó, J., W. Pan, M. Webster, **R.G. Prinn**, and G. McRae, Parameterization of urban-scale photochemistry in global atmospheric models, *Trans. Amer. Geophys. Union*, **77**, F84, 1996.

Pan, W., G. McRae, and **R.G. Prinn**, Mesoscale meteorological and chemical responses to aerosol radiative forcing, *Trans. Amer. Geophys. Union*, **77**, F85, 1996.

Graham, J. and **R.G. Prinn**, Seasonal measurements of nonmethane hydrocarbons in a subtropical evergreen forest in Southern China, *Trans. Amer. Geophys. Union*, **77**, F120, 1996.

Fraser, P.J., **R.G. Prinn**, L.P. Steele, L. Porter, J. Huang, D.M. Cunnold, F.N. Alyea, R.F. Weiss, B.R. Miller, and P.G. Simmonds, Trends of tropospheric chlorine (1976–1996) derived from ALE/GAGE/AGAGE and other observations, *Proceedings of IGAC-SPARC-GAW Conference on Global Measurement Systems for Atmospheric Composition*, 1997.

Wang, C. and **R.G. Prinn**, Interactions among emissions, atmospheric chemistry, and climate change: Implications for future trends, *Proceedings of IGAC-SPARC-GAW Conference on Global Measurement Systems for Atmospheric Composition*, 1997.

Calbó, J., W. Pan, M. Webster, **R.G. Prinn**, and G. McRae, Parameterization of urban sub-grid scale processes in global atmospheric chemistry models. MIT Joint Program on the Science and Policy of Global Change Report No. 20, 20 pgs., 1997.

Jacoby, H., **R.G. Prinn**, and R. Schmalensee, Needed: A realistic strategy for global warming, MIT Joint Program on the Science and Policy of Global Change Report No. 21, 8 pgs., 1997.

Sokolov, A.P., C. Wang, G. Holian, P.H. Stone and **R.G. Prinn**, Uncertainty in the Oceanic Heat and Carbon Uptake and Their Impact on Climate Projections, MIT Joint Program on the Science and Policy of Global Change Report No. 23, 8 pgs., 1997.

Wang, C., **R.G. Prinn** and A.P. Sokolov, A Global Interactive Chemistry and Climate Model, MIT Joint Program on the Science and Policy of Global Change Report No. 24, 34 pgs., 1997.

Wang, C. and **R.G. Prinn**, Interactions Among Emissions, Atmospheric Chemistry, and Climate Change, MIT Joint Program on the Science and Policy of Global Change Report No. 25, 18 pgs., 1997.

Xiao, X., J. Melillo, D. Kicklighter, A. McGuire, **R. Prinn**, C. Wang, P. Stone & A. Sokolov, Transient Climate Change and Net Ecosystem Production of the Terrestrial Biosphere, MIT Joint Program on the Science and Policy of Global Change Report No. 28, 25 pgs., 1997.

Prinn, R.G., Commentary: A scientist's perspective, in *Proceedings of Climate Change Policy, Economic Growth, and Environmental Quality*, American Council for Capital Formation Center for Policy Research, Washington, DC, Sept. 24, 1997.

Prinn, R.G., Huang, J., R.F. Weiss, B.R. Miller, P.G. Simmonds, S. O'Doherty, P.J. Fraser, L.P. Steele, D.M. Cunnold, F.N. Alyea, and D.E. Hartley, ALE/GAGE/AGAGE: A history of ozone-depleting gases in air, *Trans. Amer. Geophys. Union*, **78**, 1997.

Prinn, R.G., H. Jacoby, A. Sokolov, C. Wang, Z. Yang, R. Eckaus, P. Stone, D. Ellerman, J. Fitzmaurice, G. Holian, Y. Liu, X. Xiao, J. Melillo, and D. Kicklighter, Integrated Global System Model for Climate Policy Assessment: Sensitivity and uncertainty studies, *Trans. Amer. Geophys. Union*, **78**, 1997.

Sokolov, A., C. Wang, G. Holian, P. Stone, and **R.G. Prinn**, Uncertainty in the Oceanic Heat and Carbon Uptake and their Impact on Climate Projections, *Trans. Amer. Geophys. Union*, **78**, 1997.

Wang, C. and **R.G. Prinn**, Climatic and chemical effects of controls on non-CO_2 greenhouse gases, CACGP/IGAC Joint International Symposium on Global Atmospheric Chemistry, August 19–25, 1998.

Harnisch, J., I. Sue Wing, H.D. Jacoby, and **R.G. Prinn**, Primary aluminum production: Climate policy, emissions and costs, MIT Joint Program on the Science and Policy of Global Change Report No. 44, 18 pgs.,1998.

Reilly, J., **R.G. Prinn**, J. Harnisch, J. Fitzmaurice, H.D. Jacoby, D. Kicklighter, P.H. Stone, A.P. Sokolov, and C. Wang, Multi-gas assessment of the Kyoto Protocol, MIT Joint Program on the Science and Policy of Global Change Report No. 45, 14 pgs., 1998.

Mayer, M., M. Webster, G.J. McRae, and **R.G. Prinn**, Parameterization of urban subgrid scale chemical processes in MIT's Integrated Global System Model, *Trans. Amer. Geophys. Union*, **79**, F114,1998.

Wang, C. and **R.G. Prinn**, Significant impact of deep convective clouds on tropospheric chemistry deduced from three-dimensional modeling, *Trans. Amer. Geophys. Union*, **79**, 1998.

Huang, J. and **R.G. Prinn**, Optimal estimation of global OH concentrations using multiple titrating gases, *Trans. Amer. Geophys. Union*, **79**, 1998.

Prinn, R.G., Climate Change: State of the Science and Implications for Policy, Testimony to the Committee on Science, U.S. House of Representatives, 105th Congress, Countdown to Kyoto (U.S. Government Printing Office), Part I, Vol. 1, pgs. 42–68, 1998.

Mayer, M., C. Wang, M. Webster, J. Fitzmaurice, G. McRae, and **R.G. Prinn**, Sensitivity studies of the impact of urban air pollution on global atmospheric chemistry and climate, Proceedings of the Scientific Conference of the International Global Atmospheric Chemistry Program (IGAC), 1999.

Harnisch, J., H. Jacoby, **R.G. Prinn**, and C. Wang, Regional Emission Scenarios for HFCs, PFCs, and SF_6, Proceedings of the International Symposium on Non-CO_2 Greenhouse Gases (NCGG), Nordwijkerhout, Netherlands, September, 1999.

Mayer, M., C. Wang, M. Webster, J. Fitzmaurice, G. J. McRae, and **R.G. Prinn**, Linking urban air pollution to global atmospheric chemistry and climate in the framework of MIT's integrated global system model, *Trans. Amer. Geophys. Union*, **80**, S31, 1999.

Prinn, R.G., Understanding and Predicting Climate Change, in *Modelling Climate Change and its Economic Consequences, A Review*, eds. Meinhard Schröder and Stephan Lingner, European Academy, Bad Neuenahr- Ahrweiler, Germany, pgs. 9-33, June 1999.

Harnisch, J., I. Sue Wing, H.D. Jacoby, and **R.G. Prinn**, Primary aluminum production: Climate policy, emissions and costs, in *Proceedings of the Extraction and Processing Division Congress 1999, The Minerals Metals and Materials Society (TMS)*, San Diego, 1999.

Reilly, J., **R.G. Prinn**, J. Harnisch, H. Jacoby, and D. Ellerman, Integrated Analysis of Greenhouse Gases and Sinks, Proceedings of the International Symposium on Non-CO_2Greenhouse Gases (NCGG), Nordwijkerhout, Netherlands, September, 1999.

Shaw, S. and **R.G. Prinn**, Production of NMHC in Select Cyanobacteria and Phytoplankton cultures, *Trans. Amer.*
*Geophys. Union***, 80**, F46–F47, 1999.

Wang, C. and **R.G. Prinn**, Tropical deep convection, lightning, and tropospheric chemistry, *Trans. Amer.*
Geophys. Union, **80**, F196, 1999.

Prinn, R.G., Biospheric traumas caused by great impacts, in *Catastrophic events and Mass Extinctions: Impacts and Beyond*, LPI Contribution No. 1053, p169, 2000.

Wang, C. and **R.G. Prinn**, Tropical deep convection and tropospheric chemistry, Proceedings of the Thirteenth International ICCP-IAMAS conference on clouds and precipitation, Nevada, August 2000.

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.R. Wang, Source Information From GAGE/AGAGE Measurements of Methane at 5 sites from 1985 to 1999, *Trans. Amer. Geophys. Union*, **81**, F82, 2000.

Lucas, D.D., **R.G. Prinn**, Mechanistic Studies of Dimethyl Sulfide Oxidation Using an Observationally Constrained Model, *Trans. Amer. Geophys. Union*, **81**, F59, 2000.

Kicklighter, D.W., M.D. Webster, A.D. McGuire, H. Tian, J.M. Reilly, J.M. Melillo, **R.G. Prinn**, Potential Responses of Terrestrial Net Primary Production and Carbon Storage to Increasing Atmospheric Carbon Dioxide Concentration and Variable Climate: Sensitivity to Changes in Vegetation Nitrogen Concentration, *Trans. Amer. Geophys. Union*, **81**, F275-F276, 2000.

Mayer, M., C. Wang, M. Babiker, M. Webster, R. Hyman, J. Reilly, **R.G. Prinn**, Urban Air Pollution: Link to Climate Policies and Global Climate Change, *Trans. Amer. Geophys. Union*, **81**, F172, 2000.

Chen, Y., **R.G. Prinn**, P. Rasch, Effectiveness of Current CO_2 Observing Stations for Determining Regional Surface Fluxes, *Trans. Amer. Geophys. Union*, **81**, F196, 2000.

Reilly, J. and **R.G. Prinn**, Integrated Earth System Modelling and the Economics of the Kyoto Protocol, EOS Trans. AGU, **81**, Spring Meet. Suppl., Abstract B32C-09 1630h, 2000.

Kicklighter, D., M. Webster, M. Sarofim, D. McGuire, J. Melillo, J. Reilly, **R.G. Prinn** and H. Tian, Potential Responses of Terrestrial Carbon Storage to Increasing Atmospheric CO_2 Concentration and VariableClimate: Sensitivity to Changes in Vegetation Nitrogen Concentration, Abstracts of IGBP Open Science Conference, 2001.

Prinn, R.G., R.F. Weiss, D.M. Cunnold, P.J. Fraser, and P.G. Simmonds, Advanced Global Atmospheric Gases Experiment (AGAGE), in Climate Modelling and Diagnostics Laboratory Summary Report: 1998-1999, eds. R. Schnell, D. King, R. Rosson, Report 25 NOAA/ERL, Boulder, CO, pp. 140-142, 2001.

Shaw, S.L., S. Chisholm and **R.G. Prinn**, Isoprene production by marine phytoplankton, *Eos Trans. AGU,* **82**(47), Fall Meet. Suppl., Abstract OS11C-0391 0830h, 2001.

Lucas, D. and **R.G. Prinn**, Five or fifty: How many DMS oxidation reactions do you need?, *Eos Trans. AGU,* **82**(47), Fall Meet. Suppl., Abstract A52D-09 1550h, 2001.

Prinn, R.G, Predicting Future Climate Change: Science, Economics, Technology, and Social Science, Proceedings of the IPIECA Symposium on "Long-Term Carbon and Energy Management", 2001.

Prinn, R.G., Verification of Emissions by Inverse Modelling, In Non-CO_2 greenhouse gases: scientific understanding, control options, and policy aspects, eds. J. van Ham et al., Millpress, Rotterdam, pgs. 511- 515, 2002.

Forest, C. E., M.D. Webster, J. M. Reilly, A.P. Sokolov, P.H. Stone, H.D. Jacoby, and **R.G. Prinn**, Uncertainty Analysis of Global Climate Change Projections, Proceedings of Thirteenth Symposium on Global Change and Climate Variations, Amer. Met. Soc., paper no. 31039, 2002.

Huang, J. and **R.G. Prinn**, Critical evaluation of emissions for potential new OH titrating gases, Abstracts of 7th Scientific Conference of IGAC, Atmospheric chemistry within the Earth System, pg. 22, 2002.

Prinn, R.G., Climate Change: State of Science and Implications for Policy, Abstracts of 17th World Petroleum Conference, pgs. 242-245, 2002.

Felzer, B., D, Kicklighter, J. Melillo, C. Wang, Q. Zhuang and **R.G. Prinn**, Ozone effects on global net primary production and carbon sequestrian using a biogeochemistry model, *EOS Trans. AGU*, **83**(47), Fall Meet. Suppl., Abstract GC72B-0216, 2002.

Steele, H.D., and **R.G. Prinn**, Modeling the activation of externally mixed inorganic aerosol populations: the effects of competition and its sensitivity to mixing state, *EOS Trans. AGU*, **83**(47), Fall Meet. Suppl., Abstract A61A-0054, 2002.

Lucas, D. and **R.G. Prinn**, Sensitivities and uncertainties of DMS oxidation products in the marine boundary layer, *EOS Trans. AGU*, **83**(47), Fall Meet. Suppl., Abstract A61A-0066, 2002.

Sarofim, M., A.Sokolov and **R. Prinn**, Responses of carbon uptake to uncertain climatic and economic parameters in an integrated global system model, *EOS Trans. AGU*, **83**(47), Fall Meet. Suppl., Abstract GC62A-11, 2002.

Zhuang, Q., J. Melillo, D. Kicklighter, **R.G. Prinn**, P. Steudler, A. McGuire, B. Felzer, and S. Hu, Modeling methane consumption and emission between the terrestrial biosphere and the atmosphere, ESA Meeting Abstracts, 2003.

Reilly, J., H. Jacoby and **R.G. Prinn**, The other greenhouse gases, *Power Economics*, **7**, 12-15, 2003.

Lucas, D. and **R.G. Prinn**, Tropospheric aerosol formation rates from dimethylsulfide oxidation, *EOS Trans. AGU*, **84**(46), Fall Meet. Suppl., Abstract A22D-06, 2003.

Felzer, B., J. Reilly, J. Melillo, D. Kicklighter, C. Wang, **R.G. Prinn**, M. Sarofim and Q. Zhuang, Implications of ozone on carbon sequestration and climate policy in the U.S. using the MIT Integrated Global System Model, *EOS Trans. AGU*, **84**(46), Fall Meet. Suppl., Abstract B51F-07, 2003.

Zhuang, Q., J. Melillo, D. Kicklighter, **R.G. Prinn**, D. McGuire, P. Steudler, B. Felzer and S. Hu, Methane emissions from the terrestrial ecosystems of northern high latitudes during the 20th century: A retrospective analysis with a process-based biogeochemistry model, *EOS Trans. AGU*, **84**(46), Fall Meet. Suppl., Abstract B22B-02, 2003.

Reilly, J., T. Yang, S. Paltzev, C. Wang, **R.G. Prinn** and M. Sarofim, Climate change, air pollution, and the economics of health impacts, *EOS Trans. AGU*, **84**(46), Fall Meet. Suppl., Abstract U31A-04, 2003.

Hodson, E., A. Panday, Y. Yu, **R.G. Prinn** and B. Galle, A preliminary field campaign in the Kathmandu Valley, Nepal: An urban photochemistry study, *EOS Trans. AGU*, **84**(46), Fall Meet. Suppl., Abstract A11F- 0063, 2003.

Prinn, R.G., Y. Chen, J. Huang and A. Golombek, Estimation of trace gas fluxes by inverse modeling, *EOS Trans. AGU*, **84**(46), Fall Meet. Suppl., Abstract A51H-01, 2003.

Chen, Y. and **R.G. Prinn**, Estimation of atmospheric methane surface fluxes using a global 3D chemical transport model, *EOS Trans. AGU*, **84**(46), Fall Meet. Suppl., Abstract A52B-0795, 2003.

Steele, H.D. and **R.G. Prinn**, The impact of mixed soot/sulfate aerosols on cloud formation, *EOS Trans. AGU,* **85**(47), Fall Meet. Suppl., Abstract A51E-0839, 2004.

Hodson, E., O'Doherty, S., Simmonds, P., Martin, D., Young, D., **Prinn, R**., UK landfill gas emissions from a field campaign in southwestern England during July/August 2004, *EOS Trans. AGU,* **85**(47), Fall Meet. Suppl., Abstract A43C-0060, 2004.

Prinn, R.G. and Chen, Y.-H., Determination of methane emissions by region and generating process using inverse methods, *EOS Trans. AGU,* **85**(47), Fall Meet. Suppl., Abstract B42B-03, 2004.

Zhuang, Q., Melillo, J. McGuire, A., Kicklighter, D., **Prinn, R**., Steudler, P., Felzer, B., Hu, S., Methane emissions and the greenhouse gas budget in Alaska for the past and 21st centuries, *EOS Trans. AGU,* **85**(47), Fall Meet. Suppl., Abstract B42B-04, 2004.

Huang, J., Golombek, A. and **Prinn, R**., Optimal estimation of regional N_2O emissions using a three- dimensional global model, *EOS Trans. AGU,* **85**(47), Fall Meet. Suppl., Abstract A13A-0086, 2004.

Felzer, B., Williams, M., Zhuang, Q., Melillo, J., Kicklighter, D.W., **Prinn, R.G**., The effect of ozone on ecosystem processes using improved hydrological cycling within a biogeochemical model, *EOS Trans. AGU,* **85**(47), Fall Meet. Suppl., Abstract H53F-02, 2004.

Reilly, J.M., Felzer, B., Paltsev, S., Melillo, J.M., **Prinn, R.G**., Wang, C., Sokolov, A., Wang, X., The economic impact of climate, CO_2, and tropospheric ozone effects on crop yields in China, the US and Europe, *EOS Trans. AGU,* **85**(47), Fall Meet. Suppl., Abstract B33A-0239, 2004.

Prinn, R.G., Huang, J., Weiss, R.F., Cunnold, D.M., Fraser, P.J., Simmonds, P.G., Harth, C., Salameh, P., O'Doherty, S., Wang, R.H.J., Porter, L., Miller, B.R., Krummel, P., Evidence for cyclic variations of atmospheric hydroxyl radicals in the past quarter century, Abstracts of the 8thInternational Global Atmospheric Chemistry Conference, pg. 219, 2004.

Hodson, E., S. Montzka, B. Hall, **R. Prinn**, Are landfills major undocumented sources of regulated trace gases?, Abstracts of the 8th International Global Atmospheric Chemistry Conference, pg. 213, 2004.

Lucas, D.D. and **R.G. Prinn**, Parametric sensitivity and uncertainty analysis of dimethylsulfide oxidation in the remote marine boundary layer, *Atmos. Chem. Phys. Discuss*., **4**, 6379-6430, 2004.

Kicklighter, D.W, J.M. Melillo, **R.G. Prinn**, A.D. McGuire, B.S. Felzer, and Q. Zhuang, Relative importance of multiple stresses on terrestrial carbon sequestration, Abstracts, 2005 Meeting of the European Geophysical Union.

Zhuang, Q., J.M. Melillo, B.S. Felzer, D.W. Kicklighter, A.D. McGuire, A. Sokolov, **R.G. Prinn**, M.C. Sarofim, P.A. Steudler, and S. Hu, Modelling CH_4 and CO_2 fluxes in northern high latitudes under contemporary climate conditions, Abstracts, 2005 Meeting of the European Geophysical Union.

Tan, Q., **R.G. Prinn**, Y. Chen, M. Buchwitz, J.M. Ortega, R. de Beek, and J. Burrows, How accurate do satellite observations need to be? --Required accuracy of satellite data to provide information beyond ground based observations for optimization of the CH_4 flux estimate, *Eos Trans*. AGU, 86(52), Fall Meet. Suppl., Abstract A41C-0050, 2005.

Alvarado, M.J. and **R.G. Prinn**, Modeling the formation of ozone, sulfate, nitrate and condensed organic matter (COM) in vegetation fire plumes: Application to Savannah fires in SAFARI 2000, *Eos Trans*. AGU, 86(52), Fall Meet. Suppl., Abstract A31A-0810, 2005.

Hodson, E.L. and **R. Prinn**, Missing halocarbon source? *Data from a recent New England landfill field campaign*, Eos Trans. AGU, 86(52), Fall Meet. Suppl., Abstract A21A-0828, 2005.

Ortega, J.M., Q. Tan, and **R.G. Prinn**, A method to objectively relate the accuracy of satellite trace gas measurements to uncertainty in inversely estimated trace gas emissions, *Eos Trans*. AGU, 86(52), Fall Meet. Suppl., Abstract A41C-0062, 2005.

Zhuang, Q., J. Melillo, **R. Prinn**, A.D. McGuire, D. Kicklighter, B. Felzer, A. Sokolov, M. Sarofim, P. Steudler, and S. Hu, Net methane exchanges between the atmosphere and land ecosystems in the northern high latitudes over the 21st century, *Eos Trans*. AGU, 86(52), Fall Meet. Suppl., Abstract B33E-1081. 2005.

Xiao, X., **R.G. Prinn**, J. Huang, P.G. Simmonds, L.P. Steele, R.L. Langenfelds, S. O'Doherty, P.B. Krummel, P.J. Fraser, L.W. Porter, R.F. Weiss, P. Salameh, R.H. Wang, Optimal estimation of the soil uptake rate of molecular hydrogen from AGAGE and other measurements, *Eos Trans*. AGU, 86(52), Fall Meet. Suppl., Abstract A51B-0032, 2005.

Sokolov, A.P., C.A. Schlosser, S. Dutkiewicz, S. Paltsev, D.W. Kicklighter, H.D. Jacoby, **R.G. Prinn,** C.E. Forest, J. Reilly, C. Wang, B. Felzer, M.C. Sarofim, J. Scott, P.H. Stone, J.M. Melillo and J. Cohen, The MIT Integrated Global System Model (IGSM) Version 2: Model Description and Baseline Evaluation. MIT Global Change Program, Report 124, July, 40p., https://globalchange.mit.edu/publication/14579, 2005.

Felzer, B.S., M. Williams, J.M. Melillo, D.W. Kicklighter, Q. Zhuang, E.B. Rastetter, and **R.G. Prinn**, The role of evapotranspiration on the relative influence of ozone on regional carbon dynamics, Abstracts, 2006 Meeting of European Geosciences Union, Vienna, Austria.

Zhuang, Q., J. Melillo, D. Kicklighter, B. Felzer, D. McGuire, and **R. Prinn**, A modelling analysis of impact of fire disturbances on net carbon exchanges in boreal terrestrial ecosystems, Abstracts, 2006 Meeting of ESA, Memphis, TN.

Felzer, B.S., M. Williams, J.M. Melillo, D.W. Kicklighter, Q. Zhuang, E.B. Rastetter, and **R.G. Prinn**, The role of evapotranspiration on carbon dynamics and ozone uptake in temperate forests in the U.S., Abstracts, 2006 Meeting of ESA, Memphis, TN.

Panday, A.K., **R.G. Prinn** and R.P. Regmi, Observations of air quality at the edge of Kathmandu, Nepal and the diurnal cycle of air pollution in and around the Kathmandu valley, *EOS Trans*. AGU, 87(52), Fall Meet. Suppl., Abstract A11A-0809, 2006.

Tan, Q., **R. Prinn**, C. Frankenberg, T. Wagner and U. Platt, Space-based measurements and modeling of methane: effects of clouds and aerosols, *EOS Trans*. AGU, 87(52), Fall Meet. Suppl., Abstract A31B-0887, 2006.

Alvarado, M.J. and **R.G. Prinn** (2006), What causes aerosol growth and ozone production in smoke plumes?, *EOS Trans*. AGU, 87(52), Fall Meet. Suppl., Abstract A31F-03.

Prinn, R.G., Sustaining a Habitable Earth: Lessons from Climate Change, Abstracts of the 233rd National Meeting, American Chemical Society, Volume 47, No. 1, 2007.

Prinn, R.G., Climate Change: A Growing Scientific Impetus for Policy, Testimony to the Committee on Ways and Means, Hearing on Energy and Tax Policy, U.S. House of Representatives, Record of the 110th Congress, 2007.

Lee, E., A. Schlosser, M. Follows, D. Kicklighter and **R. Prinn**, Modeling carbon fluxes between the Arctic Atmosphere, Ocean and Land Ecosystems, EOS Trans. AGU, 88(52), Fall Meet. Suppl., Abstract B52B-04, 2007.

Panday, A. and **R. Prinn**, Basin by Night and Plateau by Day: Air Pollution Accumulation and Ventilation in the Kathmandu Valley, Nepal, *EOS Trans*. AGU, 88(52), Fall Meet. Suppl., Abstract A51G- 04, 2007.

Tan, Q., and **R. Prinn**, Integrating Retrieved Cloud Information with Model Simulation to extend Usability of Trace Gas Retrievals, *EOS Trans*. AGU, 88(52), Fall Meet. Suppl., Abstract A21B-0439, 2007.

Castanho, A. D. de A., **R. Prinn**, L. Molina, P. Artaxo, L. Remer and M. Chin, Evaluation of the use of high spatial resolution AOD retrievals from MODIS on air quality monitoring systems in urban areas, *EOS Trans*. AGU, 88(52), Fall Meet. Suppl., Abstract A53H-03, 2007.

Prinn, R. and J. Huang, Hydroxyl Radical Determination from Methyl Chloroform: Current Utility and Future Viability, *EOS Trans*. AGU, 88(52), Fall Meet. Suppl., Abstract A52A-02, 2007.

Xiao, X., **R. Prinn,** R. Weiss, P. Simmonds and P. Fraser, Optimal Estimation of the Surface Fluxes of Chloromethanes using a 3D Global Chemical Transport Model, *EOS Trans*. AGU, 88(52), Fall Meet. Suppl., Abstract A11C-0613, 2007.

Krummel, P.B., L.P. Steele, P.J. Fraser, L.W. Porter, N. Derek, S.A. Montzka, E.J. Dlugokencky, G.S. Dutton, B.D. Hall, J.W. Elkins, B.R. Miller, P.K. Salameh, J. Mühle, C. Harth, R.F. Weiss, S. O'Doherty, P.G. Simmonds, B.R. Greally, and **R.G. Prinn**, Selected results from trace gas inter-comparisons between AGAGE in situ and NOAA flask data, NOAA-ESRL Summary Report, 2008.

Huang, J., Wang, R., Prinn, R., and Cunnold, D., A semi-empirical representation of the temporal variation of total greenhouse gas levels expressed as equivalent levels of carbon dioxide. MIT Global Change Joint Program, Report 174, June, 10 p., https://globalchange.mit.edu/publication/15578, 2009.

Hodson, E., **R. Prinn**: Municipal Solid Waste Landfills as a Source of Montreal Protocol-regulated gases in the United States and United Kingdom. *Eos Transactions AGU*, 89(53), Fall Meeting Supplement, Abstract A51B-0091, 2008.

Lee, E., C.A. Schlosser, B. Felzer, D. Kicklighter, T. Cronin, J. Melillo, **R.G. Prinn**: Is plant migration restrained by available nitrogen supply in high latitudes? *Eos Transactions AGU*, 89(53), Fall Meeting Supplement, Abstract B51E-0446, 2008.

Potter, K.E., S. Ono, B. Greally, P. Simmonds, D. Young, **R.G. Prinn**: Tropospheric N_2O Isotopic Composition: Instrumentation Development and Initial Data for Reducing N_2O Source and Sink Uncertainties. *Eos Transactions AGU*, 89(53), Fall Meeting Supplement, Abstract B23C-0442, 2008.

Prinn, R., S. Paltsev, A. Sokolov, M. Sarofim, J. Reilly and H. Jacoby, The Influence on Climate Change of Differing Scenarios for Future Development Analyzed Using the MIT Integrated Global System Model. MIT Global Change Joint Program, Report 163, September, 28 p. https://globalchange.mit.edu/publication/14565, 2008

Prinn, R.G., A. Sokolov, and M. Webster, Current and Future Emissions and Concentrations of Trace Gases Impacting the Stratosphere. *Eos Transactions AGU*, 89(53), Fall Meeting Supplement, Abstract A12B-03, 2008.

Prinn, R.G., Climate Change: Integrating Science and Economics, *Eos Transactions AGU,* 89(53), Fall Meeting Supplement, Abstract U54B-01, 2008.

Rigby, M., **R. Prinn,** P. Fraser, P. Simmonds, R. Langenfelds, J. Huang, *et al.,* Recent Atmospheric Methane Growth: AGAGE and CSIRO Measurements and Optimal Estimation of Hemispheric Emission Rate Increases. *Eos Transactions AGU*, 89(53), Fall Meeting Supplement, Abstract B33B-0402, 2008.

Selin, N.E, E. Sunderland, C. Knightes, R. Mason, S. Paltsev, J. Reilly, **R. Prinn,** 2008: Source Attribution of Mercury Exposure for U.S. Seafood Consumers: Implications for Policy. *Eos Transactions AGU*, 89(53), Fall Meeting Supplement, Abstract A51L-07, 2008.

Mühle, J., B.R. Miller, P. Salameh, C.M. Harth, B.R. Greally, L.W. Porter, S. O'Doherty, A. Ganesan, V.V. Petrenko, J.P. Severinghaus, P.G. Simmonds, P. Fraser, **R.G. Prinn,** and R.F. Weiss: Tetrafluoromethane in the global atmosphere. *Eos Transactions AGU*, 89(53), Fall Meeting Supplement, Abstract A51B-0094, 2008.

McGuire, A. D., D.J. Hayes, D.W. Kicklighter, M. Manizza, Q. Zhuang, M. Chen, M.J. Follows, K.R. Gurney, J.W. McClelland, J.M. Melillo, B.J. Peterson, and **R.G. Prinn**, An Analysis of the Carbon Balance of the Arctic Basin from 1997 to 2006, Proceedings of 8th International Carbon Dioxide Conf., Jena,Germany, 2009.

Selin, N. E., C. Wang, J. M. Reilly, S. Paltsev; **R.G. Prinn**, Impact of Climate Mitigation on Aerosol Concentrations and Health Effects in Asia, *Eos Trans. AGU, 90(52)*, Fall Meet. Suppl., Abstract A12A-01, 2009.

Cohen, J. B; C. Wang; **R.G. Prinn**, The Impact of Detailed Urban Scale Processing on the Simulation ofthe Concentration and Distribution of Aerosols in Asia, *Eos Trans. AGU, 90(52)*, Fall Meet. Suppl., Abstract A14A-05, 2009.

Rigby, M. L.; **R.G. Prinn**; J. Muhle; B. R. Miller; E. J. Dlugokencky; P. B. Krummel; L. P. Steele; P. J. Fraser; M. Leist; R. F. Weiss; C. M. Harth; S. J. O'Doherty; B. R. Greally; P. G. Simmonds; N. Derek; M. K. Vollmer; J. Kim; K. Kim; L. W. Porter, Atmospheric Sulfur Hexafluoride: Measurements and Emission Estimates from 1970 – 2008, *Eos Trans. AGU, 90(52)*, Fall Meet. Suppl., Abstract A31E-0173, 2009.

Muhle, J.; B. R. Miller; P. K. Salameh; A. L. Ganesan; C. M. Harth; B. R. Greally; S. J. O'Doherty; C. M. Trudinger; L. W. Porter; L. P. Steele; P. B. Krummel; V. V. Petrenko; M. L. Rigby; P. G. Simmonds; P. J. Fraser; **R.G. Prinn**; R. F. Weiss, Perfluorocarbons in the global atmosphere: a) Measurements of tetrafluoromethane, hexafluoroethane, and octafluoropropane, *Eos Trans. AGU, 90(52)*, Fall Meet. Suppl., Abstract A31E-0174, 2009.

Ganesan, A. L.; J. Muhle; M. L. Rigby; B.R. Miller; P. K. Salameh; C. M. Harth; B. R. Greally; S. J. O'Doherty; M. Trudinger; L. W. Porter; P. Steele; P. B. Krummel; V. V. Petrenko; P. G. Simmonds; P. J. Fraser; **R.G. Prinn**; R. F. Weiss (2009), Perfluorocarbons in the global atmosphere: b) Emission estimates using inversions of atmosphericobservations of tetrafluoromethane, hexafluoroethane, and octafluoropropane, *Eos Trans. AGU, 90(52)*, Fall Meet. Suppl., Abstract A31E-0175, 2009.

Ivy, D. J.; M. L. Rigby; **R.G. Prinn**; J. Muhle; R. F. Weiss, Atmospheric Nitrogen Trifluoride: Optimized emission estimates using 2-D and 3-D Chemical Transport Models from 1973-2008, *Eos Trans. AGU, 90(52)*, Fall Meet. Suppl., Abstract A31E-0177, 2009.

Patra, P. K.; M. Krol; D. Cunnold; P. J. Fraser; S. J. O'Doherty; **R.G. Prinn**; P. G. Simmonds; P. Steele; R. F. Weiss; P. B. Krummel; S. Lal; S. Toyoda; M. Takigawa; K. Ishijima; T. Nakazawa, Simulation of maturity and decay of methyl chloroform (CH3CCl3) in the atmosphere, *Eos Trans. AGU, 90(52)*, Fall Meet. Suppl., Abstract A52A-08, 2009.

Zhuang, Q.; J. Tang; Y. Lu; X. Xiong; J. M. Melillo; **R.G. Prinn**; A. D. McGuire, Evaluating Contributions of Wetland and Lake Emissions of Methane to Atmospheric Methane Concentrations with models of Biogeochemistry and Atmospheric Chemistry Transport in Northern High Latitudes, *Eos Trans. AGU, 90(52)*, Fall Meet. Suppl., Abstract A53C-0276, 2009.

Lee, E.; C. A. Schlosser; B. S. Felzer; **R.G. Prinn**, Incorporating plant migration constraints into the NCAR CLM-DGVM model: Projections of future vegetation distribution in high latitudes, *Eos Trans. AGU, 90(52)*, Fall Meet. Suppl., Abstract B41C-0336, 2009.

Sokolov, A. P.; P. H. Stone; C. E. Forest; **R.G. Prinn**; M. C. Sarofim; M. Webster; S. Paltsev; J. M. Reilly, Relative contributions of uncertainty in anthropogenic emissions and climate system response to the uncertainty of projected 21st century climate, *Eos Trans. AGU, 90(52)*, Fall Meet. Suppl., Abstract GC44A-05, 2009.

Cohen, J. B., C. Wang, **R.G. Prinn**, The Impact of Detailed Urban-Scale Processing on the Aerosol Direct Effect and its Impacts on the Climate, Abstract B11J-05, AGU Fall Meeting, 2010.

Cronin, T. W., **R.G. Prinn**, Regional Climate Response to Physiological Forcing of Carbon Dioxide in a Radiative-Convective Model, Abstract GC13C-0723 *Poster*, AGU Fall Meeting, 2010.

Lee, E., C. A. Schlosser, **R.G. Prinn**, Impacts of wind-dispersed seed availability on the estimation of natural vegetation distributions to climate scenarios for the 21st century, Abstract GC23C-0936 *Poster*, AGU Fall Meeting, 2010.

Muhle, J.; M. K. Vollmer; P. J. Fraser; T. S. Rhee; D. J. Ivy; T. Arnold; C. M. Harth; P. Salameh; S. O'Doherty; Young; P. Steele; P. B. Krummel; M. Leist; N. Schmidbauer; C. Lunder; J. Kim; K. Kim; S. Reimann; P. Simmonds; **R.G. Prinn**; R. F. Weiss, Cyclo-octafluorobutane (PFC-318) in the global atmosphere, Abstract A51D-0143 *Poster*, AGU Fall Meeting, 2010.

Rigby, M.L., J. Muhle, B.R Miller, **R.G Prinn**, P.B. Krummel, P. Steele, P.J. Fraser, P. Salameh, C.M. Harth, Weiss, B.R. Greally, S. O'Doherty, P. Simmonds, M. K. Vollmer, S. Reimann, J. Kim, K.-R. Kim, H.-J, Wang, J.G.J. Olivier, E.J. Dlugokencky, G.S. Dutton, B.D. Hall, J. W. Elkins, History of Atmospheric SF6 Emissions from 1973 to 2008, Abstract A43D-0278 *Poster*, AGU Fall Meeting, 2010.

Webster, M. D.; J. M. Reilly; S. Paltsev; A. P. Sokolov; C. Wang; **R.G. Prinn**, Risk Management Framework for Incorporating Climate Impacts into Policy Analysis, Abstract U23C-06, AGU Fall Meeting, 2010.

Prinn, R., P. Heimbach, M. Rigby, S. Dutkiewicz, J.M. Melillo, J.M. Reilly, D.W. Kicklighter and C. Waugh, A Strategy for a Global Observing System for Verification of National Greenhouse Gas Emissions. MIT Global Change Report 200, June, 92 p. (https://globalchange.mit.edu/publication/15581), 2011.

Saikawa, E., C.A. Schlosser and **R.G. Prinn**, Process Modeling of Global Soil Nitrous Oxide Emissions. MIT Global Change Joint Program, Report 206, Sept., 28 p. (https://globalchange.mit.edu/publication/14346), 2011

Ivy, D.J., T. Arnold, M.L. Rigby, M. Baasandorj, J. Muhle, C. Harth, P. Salameh, P. Steele, M. Leist, P.B. Krummel, J. B. Burkholder, P. Fraser, R.F. Weiss**, R.G. Prinn**, Heavy perfluorocarbons in the global atmosphere: Atmospheric histories and top-down global emission estimates for C4F10, C5F12, C6F14, C7F16 and C8F18, Abstract A13J-03, Fall Meeting, American Geophys. Union, 2011.

Lee, E., CA. Schlosser, X. Gao, **R.G. Prinn,** Impacts of Seed Dispersal on Future Vegetation Structure under Changing Climates, Abstract B43F-0362, Fall Meeting, American Geophysical Union, 2011.

Meredith, L.K., J. McLaren, R. Commane, J.W. Munger, **R.G. Prinn**, S.C. Wofsy, A.D. Richardson, Fluxes of H_2, COS, and CO_2 across a temperate forest snowpack driven by below snow soil microbial processes, Abstract B33F-0539, 2011 Fall Meeting, American Geophysical Union, 2011

Muhle, J., M. Vollmer, D.J. Ivy, P. Fraser, T. Arnold, C.M. Harth, P. Salameh, S. O'Doherty, D. Young, P. Steele, P.B. Krummel, M. Leist, T.S. Rhee, N. Schmidbauer, C. Lunder, J. Kim, K.-R. Kim, S. Reimann, P. Simmonds, **R.G. Prinn**, R.F. Weiss, Cyclo-octafluorobutane (PFC-318, c-C4F8) in the global atmosphere, Abstract A11E-0123, Fall Meeting, American Geophysical Union, 2011.

Rigby, M.L., A.J. Manning, **R.G. Prinn**, Simultaneous Regional and Global Trace Gas Emissions Using Eulerian and Lagrangian Chemical Transport Models, Abstract A53E-01, 2011 Fall Meeting, American Geophysical Union, 2011.

Ishijima, K., P. Patra, E. Saikawa, M. Rigby, G. Dutton, J. Elkins, Y. Tohjima, P. Fraser, B. Hall, S. O'Doherty, **R. Prinn**, H. Wang, R. Weiss, Seasonal cycle of nitrous oxide: implications of transport and emission seasonality, *Transcom*, Beijing, April 2012.

Ishijima, K., P. Patra, E. Saikawa, M. Rigby, G. Dutton, J. Elkins, Y. Tohjima, P. Fraser, P. Steele, P. Krummel, B. Hall, S. O'Doherty, **R. Prinn**, H. Wang, R. Weiss, J. Mühle, Understanding nitrous oxide seasonal cycle: role of stratosphere-troposphere exchange and tropospheric transport, *IGAC*, Beijing, China, September 2012.

Saikawa, E., C.A. Schlosser, M.L. Rigby, **R.G. Prinn,** R.F. Weiss, P. Fraser, P.B. Krummel, P. Steele, S.J. O'Doherty, P. Simmonds, E.J. Dlugokencky, J.W. Elkins, G.S. Dutton, B.D. Hall, Y. Tohjima, T. Machida, T. Nakazawa, S. Aoki, K. Ishijima, Global N_2O emissions – with a focus on natural soil, Abstract B44A-06 presented at Fall Meeting, American Geophysical Union, 2011.

Saikawa, E., M. Rigby, **R.G. Prinn**, S.A. Montzaka, B. Miller, L.J.M. Kuijpers, P. Fraser, M.K. Vollmer, B. Yao, L. Zhou, T. Saito, Y. Yokouchi, J. Kim, S. Park, D. Young, S. O'Doherty, P. Simmonds, C. Harth, J. Mühle, R. Weiss, P. Krummel, M. Maione, C. Lunder, C. Sweeney, A. Andrews and P. Tans: Global and regional emissions estimates for HCFC-22, 40th NOAA ESRL Global Monitoring Annual Conference (Boulder, CO, May 15–17), 2012.

Saikawa, E., C.A. Schlosser, X. Gao and **R. Prinn**, Global Soil Nitrous Oxide Emissions in a Future Climate, First Conference on Atmospheric Biogeosciences (Boston, May 28–June 1) (https://ams.confex.com/ams/30AgFBioGeo/webprogram/Paper207574.html), 2012.

Saikawa, E., C.A. Schlosser and **R.G. Prinn**: Process modeling of global soil nitrous oxide emissions, ACCENT-IGAC-GEIA Conference, Emissions to Address Science and Policy Needs (Toulouse, France, June 11–13), 2012.

Saikawa, E., B. Miller, M. Rigby, **R.G. Prinn**, L.J.M. Kuijpers, M.K. Vollmer, P. Fraser, A. McCulloch, S.A. Montzka, T. Saito, Y.Yokouchi, J. Kim, S. Park, D. Young, C. Harth, C. Lunder, O. Hermansen, M. Maione, J. Arduini, B. Yao, P. Salameh, P. Krummel, S. O'Doherty, P. Simmonds, L. Zhou, J. Mühle, R. Weiss, C. Sweeney, A. Andrews and P. Tans: Global and regional emissions estimates for HCFC-22, ACCENT- IGAC-GEIA conference (Toulouse, France, June 11–13), 2012

Saikawa, E., C.A. Schlosser, X. Gao and **R. Prinn**, Estimating N_2O Emissions Using DNDC in CLMCN, Community Earth System Model (CESM) workshop (Breckenridge, CO, June 18–21), 2012.

Ganesan, A.L., A. Chatterjee, P. Salameh, C.M. Harth, M. Rigby, A.J. Manning, B.D. Hall, S.K. Ghosh, J. Muhle, L.K. Meredith, T.K. Mandal, R.F. Weiss and **R.G. Prinn**, New High-Frequency Measurements of CH_4, N_2O and SF_6 from a High-Altitude Station in the Eastern Himalayas of India and Derived Emissions Estimates, American Geophysical Union Fall Meeting, *Eos Trans*., Abstract A11H-0146, 2012.

Gasore, J. and **R.G. Prinn**, Uncertainty Analysis in 3D Global Models: Aerosol Representation in MOZART-4, American Geophysical Union Fall Meeting, *Eos Trans*., Abstract GC43E-1089, 2012.

Krummel, P., P. Fraser, A. Klekociuk, M. Tully, P. Steele, C. Trudinger, D. Etheridge, N. Derek, S. O'Doherty, P. Simmonds, B. Miller, J. Mühle, R. Weiss, D. Oram, **R. Prinn**, H. Wang, The 2012 Ozone Hole and updated Equivalent Effective Stratospheric Chlorine data, Abstracts, *Atmospheric Composition Observations and Modelling Conference/Cape Grim Annual Science Meeting*, p. 9, Murramarang Resort, South Durras, NSW, November 2012.

Meredith, L.K., J.W. Munger, S.C. Wofsy, R. Commane, A.M. Crotwell, P. Salameh and **R.G. Prinn**, An Improved Understanding of the Biosphere-Atmosphere exchange of H_2: Tower-Based Fluxes in a mid-Latitude Forest, American Geophysical Union Fall Meeting, *Eos Trans*., Abstract B44A-06, 2012.

Merrifield, A., **R.G. Prinn** and S. Ono: An Ongoing Observational Study of Greenhouse Gas Emissions in the Greater Boston Area, American Geophysical Union Fall Meeting, *Eos Trans*., Abstract GC53B-1275, 2012.

Rao, D., L.K. Meredith, T. Bosak, C.M. Hansel, S. Ono and **R.G. Prinn**: Exploring the Microbially- Mediated Soil H_2 Sink: A Lab-Based Study of the Physiology and Related H_2 Consumption of Isolates from the Harvard Forest, American Geophysical Union Fall Meeting, *Eos Trans*., Abstract B51B-0531, 2012.

Rigby, R., **R.G. Prinn**, S. O'Doherty, D. Young, P.G. Simmonds, J. Muhle, P. Salameh, C.M. Harth, R.F. Weiss, P. Steele, P.B. Krummel and P.J. Fraser: Recent Trends in Non-CO_2 Greenhouse Gases, and their Implications for Emissions and Lifetime Estimates, American Geophysical Union Fall Meeting, *Eos Trans*., Abstract A24A-01, 2012.

Saikawa, E., C.A. Schlosser and **R.G. Prinn**, Possible ENSO Influence on Soil N_2O Emissions and Atmospheric N_2O Mole Fractions, American Geophysical Union Fall Meeting, *Eos Trans*., Abstract A231-02, 2012.

Thompson, R., F. Chevallier, P. Ciais, A. Stohl, E.J. Dlugokencky, **R.G. Prinn**, R.F. Weiss, R. Langenfelds, Y. Tohjima, T. Nakazawa: Inter-annual Variability in Atmospheric Nitrous Oxide from 1996 to 2009, American Geophysical Union Fall Meeting, *Eos Trans*., Abstract A231-03, 2012.

Zhuang, Q., X. Zhuang, X. Zhu, C. Prigent, J.M. Melillo, A.D. McGuire, **R.G. Prinn** and D.W. Kicklighter, Influence of Changes in Wetland Inundation Extent on Net Fluxes of Carbon Dioxide and Methane in Northern High Latitudes from 1993 to 2004, American Geophysical Union Fall Meeting, *Eos Trans*., Abstract B24C-02, 2012.

Fraser, P., B. Dunse, P. Krummel, P. Steele, D. Etheridge, N. Derek, A. Manning, R. Wang, **R. Prinn**, Global and Australian synthetic greenhouse gas emissions: mitigation challenges and opportunities, *Greenhouse 2013*, Adelaide, October 2013.

Meredith, L.K., R. Commane, J.W. Munger, S.C. Wofsy, **R.G. Prinn**, Microbial imprint on soil- atmosphere H2, COS, and CO2 fluxes, American Geophysical Union Fall Meeting, *Eos Trans*., Abstract B51D-0296, 2013.

Prinn, R. G., The MIT Integrated Global System Model: A facility for Assessing and Communicating Climate Change Uncertainty, American Geophysical Union Fall Meeting, *Eos Trans*., Abstract GC34C-01, 2013.

Saikawa, E., **R.G. Prinn**, E.J. Dlugokencky, K. Ishijima, G.S. Dutton, B.D. Hall, R. Langenfelds, Y. Tohjima, T. Machida, M. Manizza, M.L. Rigby, S.J. O'Doherty, P.K. Patra, C. Harth, R.F. Weiss, P.B. Krummel, M. van der Schoot, P. Fraser, P. Steele, S. Aoki, T. Nakazawa, J.W. Elkins, Global and regional emissions estimates for N2O, American Geophysical Union Fall Meeting, *Eos Trans*., Abstract A231-02, 2013.

Schlosser; C.A.; K.M. Strzepek; X. Gao; C.W. Fant; E. Blanc; E. Monier; A.P. Sokolov; S. Paltsev; C. Arndt; **Prinn**; J.M. Reilly; H. Jacoby, Assessing the Roles of Regional Climate Uncertainty, Policy, and Economics on Future Risks to Water Stress: A Large-Ensemble Pilot Case for Southeast Asia, American Geophysical Union Fall Meeting, *Eos Trans*., Abstract H51E-1230, 2013.

Thompson, R., A. Stohl, L.X. Zhou, E.J. Dlugokencky, Y. Fukuyama, Y. Tohjima, S. Kim, H. Lee, R.F. Weiss, **R.G. Prinn**, S. O'Doherty, P. Fraser: Methane emission estimates in East Asia from a Bayesian atmospheric inversion, American Geophysical Union Fall Meeting, *Eos Trans*., Abstract A23I-08, 2013.

Lunt, M., M. Rigby, A. Ganesan, A. Manning, S. O'Doherty, **R. Prinn**, P. Krummel, P. Steele, P. Fraser, S. Li, S. Park, J. Kim, Are national HFC inventory reports accurate?, American Geophysical Union Fall Meeting, *Eos Trans*., Abstract A42C-06, 2014.

McClellan, M., E. Harris, W. Olszewski, S. Ono, **R. Prinn**, Analysis of high frequency site-specific nitrogen and oxygen isotopic composition of atmospheric nitrous oxide at Mace Head, Ireland, American Geophysical Union Fall Meeting, *Eos Trans*., Abstract A33G-3282, 2014.

Xiang, B., P. Patra, S. Montzka, S. Miller, J. Elkins, F. Moore, E. Atlas, B. Miller, **R. Prinn**, S. Wofsy, Global emissions of refrigerants $HCFCO_2$ and HFC-134a: Unforeseen seasonal contributions, American Geophysical Union Fall Meeting, *Eos Trans*., Abstract A42C-05, 2014.

McClellan, M.J., E. J. Harris, W. Olszewski, S. Ono, and **R.G. Prinn**, Measurement and modeling of site-specific nitrogen and oxygen isotopic composition of atmospheric nitrous oxide at Mace Head, Ireland (Paper ID: 2289701), 250th American Chemical Society National Meeting (Boston, MA, August 16-20), 2015.

DeWitt, L., J. Gasore, **R. Prinn**, and K. Potter, Measurements of Background and Polluted Air in Rural Regions of Rwanda, American Geophysical Union Fall Meeting, Abstract B11A-0405, https://agu.confex.com/agu/fm15/meetingapp.cgi/Paper/636922, 2015.

Fang, G. Velders, A. Ravishankara, M. Molina, S. Su, J. Zhang, X. Zhou, J. Hu, and **R. Prinn**, Emission Inventory of Halogenated greenhouse gases in China during 1980-2050, American Geophysical Union Fall Meeting, Abstract A51B-0042, https://agu.confex.com/agu/fm15/meetingapp.cgi/Paper/82837., 2015.

Ganesan, A., M. Lunt, M. Rigby, A. Chatterjee, H. Boesch, R. Parker, **R. Prinn,** M. van der Schoot, P. Krummel, Y. Tiwari, H. Mukai, T. Machida, Y. Terao, S. Nomura, and P. Patra, Constraining methane emissions from the Indo-Gangetic Plains and South Asia using combined surface and satellite data, American Geophysical Union Fall Meeting, Abstract A42C-02, https://agu.confex.com/agu/fm15/meetingapp.cgi/Paper/77962, 2015.

Gasore, J., L. DeWitt, and **R. Prinn**, First Continuous High Frequency in Situ Measurements of CO_3 and CH_4 in Rwanda, Using Cavity Ring-down Spectroscopy, American Geophysical Union Fall Meeting, Abstract, B11A-0409, https://agu.confex.com/agu/fm15/meetingapp.cgi/Paper/71705, 2015.

McClellan, M., E. Saikawa, **R. Prinn**, and S. Ono, Measurement and Modeling of Site-specific Nitrogen and Oxygen Isotopic Composition of Atmospheric Nitrous Oxide at Mace Head, Ireland, American Geophysical Union Fall Meeting, Abstract A11I-0183, https://agu.confex.com/agu/fm15/meetingapp.cgi/Paper/48380, 2015.

Rigby, M., A. Wenger, S. O'Doherty, M. Lunt , A. Ganesan, A. Manning, and **R. Prinn**, Inferring global and regional methane sources and sinks using isotopic observations and atmospheric chemical transport models American Geophysical Union Fall Meeting (San Francisco, Dec. 14-18), Abstract A11I-0178, https://agu.confex.com/agu/fm15/meetingapp.cgi/Paper/70177, 2015.

Sokolov, A., S. Paltsev, H. Chen, M. Haigh, and **R. Prinn**, Climate Stabilization at 2ºC and "Net Zero" Emissions, American Geophysical Union Fall Meeting, Abstract GC43C-1212, https://agu.confex.com/agu/fm15/meetingapp.cgi/Paper/66532, 2015.

Tian, H., C. Lu, P. Ciais, A. Michalak, J.P. Canadell, , E. Saikawa, D. Huntzinger ,K. Gurney, S. Sitch, B. Zhang, J. Yang, P. Bousquet, L. Bruhwiler, G. Chen, E. Dlugokencky, P. Friedlingstein, J. Melillo, S. Pan, B. Poulter, **R. Prinn**, M. Saunois, C. Schwalm, and S. Wofsy,: The full budget of greenhouse gases in the terrestrial biosphere: From global C project to global GHG project, American Geophysical Union Fall Meeting, Abstract B21M-03, https://agu.confex.com/agu/fm15/meetingapp.cgi/Paper/86216, 2015.

Wells, K., D. Millet, N. Bousserez, D. Henze, S. Chaliyakunnel, T. Griffis, E. Dlugokencky, **R. Prinn**, S. O'Doherty, R. Weiss, G. Dutton, J. Elkins, P. Krummel, R. Langenfelds, P. Steele, Evaluating Observational Constraints on N_2O Emissions via Information Content Analysis Using GEOS-Chem and its Adjoint, American Geophysical Union Fall Meeting, Abstract A31B-0040, https://agu.confex.com/agu/fm15/meetingapp.cgi/Paper/79283, 2015.

Gertler, C.G., E. Monier and **R.G. Prinn**,: The Role of Arctic Sea Ice in Last Millennium Climate Variability: Model-Proxy Comparisons Using Ensemble Members and Novel Model Experiments, American Geophysical Union Fall Meeting, Abstract PP41C-2260, 2016.

Gressent, A., J. Muhle, M.L Rigby, M.F. Lunt, A. Ganesan, **R.G. Prinn**, P.B. Krummel, P.J. Fraser, P. Steele, R.F. Weiss, C.M. Harth, S. O'Doherty, D. Young, S. Park, S. Li, B. Yao, S. Reimann, M. K. Vollmer, M. Maione, I. Arduini and C.R. Lunder, Optimal Estimation of Sulfuryl Fluoride Emissions on Regional and Global Scales Using Advanced 3D Inverse Modeling and AGAGE, American Geophysical Union Fall Meeting, Abstract A23P-02, 2016.

McClellan, M.J., M.L. Rigby, A. Ganesan, M.F. Lunt, E. Saikawa, S. Ono and **R.G. Prinn**, Source- Specific Nitrous Oxide Emissions in Ireland and UK from New Isotopically Resolved Measurements and Models, American Geophysical Union Fall Meeting, Abstract A41J-06, 2016.

Prinn, R.G.,: Valuing and Maintaining Independent Research with Private Sector Funding, American Geophysical Union Fall Meeting, Abstract PA14A-02, 2016.

Turner, A.J., C. Frankenberg, P.O. Wennberg, D. Jacob, P.B. Krummel, S. O'Doherty, **R. G. Prinn** and R.F. Weiss, On the renewed growth of atmospheric methane: implications for the oxidative capacity of the troposphere, American Geophysical Union Fall Meeting, Abstract A22G-08, 2016.

Liu, Y., J. Sheng, **R.G. Prinn,** et al. (2022): Increase in global and East Asia Nitrogen trifluoride (NF3) emissions inferred from atmospheric observations. *American Geophysical Union (AGU) Fall Meeting*, A51K-08 (https://agu.confex.com/agu/fm22/meetingapp.cgi/Paper/1170283)

An, M., **Prinn, R**., Western, L., Yao, B., Hu, J., and Rigby, M.: *Emissions of SF6 in China inferred from atmospheric observations,* EGU General Assembly 2023, Vienna, Austria, 24–28 Apr 2023, EGU23-7010, https://doi.org/10.5194/egusphere-egu23-7010, 2023.

Wang, P., S. Solomon, M. Lickley, J.R. Scott and R.F. Weiss and **R.G. Prinn** (2023): On the Influence of Ocean Sinks and Hydroxyl Radical Changes on Estimated Lifetimes and Emissions of Halogenated Greenhouse Gases. *American Geophysical Union (AGU) Fall Meeting*, Board 1081 (https://agu.confex.com/agu/fm23/meetingapp.cgi/Paper/1355656

Xu, Y., . . . and **R. Prinn** (2023): Modeling Impacts of Wildfires on Soil Thermal and Hydrological and Carbon Dynamics in Northern High Latitudes. *American Geophysical Union (AGU) Fall Meeting*, Board 0873 (https://agu.confex.com/agu/fm23/meetingapp.cgi/Paper/1366255)

3. SELECTED INVITED LECTURES

"Atmospheric Composition and Climate Change", presentation at MIT Club of Nevada, University of Nevada, Las Vegas, Nevada, 30 January 2001.

"Environment and Global Change", presentation at the 25th Anniversary of the White House Office of Science and Technology Policy Symposium. MIT, 1 May 2001.

"Significant Changes in Atmospheric OH over the past 22 Years", presentation to Climate Conference at Universiteit Utrecht, Utrecht, Netherlands, 23 August 2001.

"Human Impact on air chemistry and quality", presentation to Revelle Climate Policy Program Meeting at Scripps Institution of Oceanography, 10 September 2001.

"Predicting Future Climate Change: Science, Economics, Technology, and Social Science", Presentation at the IPIECA Symposium on Long-Term Carbon and Energy Management: Issues and Approaches, Cambridge, MA, 15 October 2001.

"Is the oxidizing capability of the atmosphere decreasing?", presentation to Yale University Department of Geology and Geophysics, New Haven, CT., 23 October 2001.

"Verification of Emissions by Inverse Modelling", presentation at the Third International Symposium on Non-CO_2 Greenhouse Gases (NCGG), Maastricht, The Netherlands, 22 January 2002.

"Climate, Change: Uncertainty and Policy Implications", presentation at Alliance for Global Sustainability Symposium, San Juan, Costa Rica, 21 March 2002.

"Atmospheric and Biospheric Traumas caused by Great Impacts", MIT-MASS Seminar, 18 April 2002. "Climate Change: Integrating Science, Economics and Policy under Uncertainty", presentation at Cambridge-MIT Distinguished Lecture Broadcast, Cambridge, MA, 24 April 2002.

"Is the Cleansing Capacity of the Atmosphere Changing", presentation at CEEPR-MIT Energy and Environmental Policy Workshop, 2 May 2002.

"The AGAGE Program: Global and Regional Trends in Trace Gases and Inferred Emissions and OH Trends", presentation to NIES, Tsukuba, Japan, 20 May 2002.

"From Complex Science to Contentious Policy: Lessons from Global Warming", opening session presentation at Technology Day (organized by the MIT Alumni Association), Cambridge, MA, 8 June 2002.

"Climate Change: State of Science and Implications for Policy" presentation at the 17th World Petroleum Congress, Rio De Janeiro, Brazil, 2 September 2002.

"Climate Change and Climate-ecosystem Interactions", presentation at SUNY, Stonybrook, NY, 11 September 2002.

"Detection of OH Trends", presentation at IGAC-VII and CACGP-X Symposium, Crete, 20 September 2002. "Is the cleansing capacity of the atmosphere changing?" Graduate School of Oceanography seminar at University of Rhode Island, Narragansett, RI, 2 October 2002.

"Climate Change and Climate-Ecosystem Interaction", The 2002 Harris Lecture at Texas A&M University, 8 October 2002. "Climate Change: From uncertain Science to Contentious Policy", Soil and Crop Sciences seminar at Texas A&M University, 9 October 2002.

"AGAGE Trace Gas Measurements from 1978-2002 and Implications for Atmospheric Chemistry", presentation at Harvard Atmospheric Chemistry Seminar, Cambridge, MA, 25 October 2002.

"Global Warming: From Complex Science to Contentious Policy", MIT on the Road presentation, Detroit, MI, 2 November 2002.

"Climate Change: Uncertainty and Linkages to Urban Air Pollution", CICERO - Univ. Oslo, Norway, 22 October 2002.

"Climate Change: Complexities and Uncertainties", Symposium on Climate Change, Cosmo CAIXA, Museo de la Ciencia, Madrid, Spain, 20 March 2003.

"Climate Change: Complexities and Uncertainties", Plenary Lecture, 5th International Conference on Environmental Future, ETH, Zurich, Switzerland, 23 March 2003.

"Recent Developments and Issues in Climate Change Science", EPRI Global Change Research Seminar, Arlington, VA, 28 May 2003.

"Climate Change: Complexities and Uncertainties", MIT Knight Science Journalism Lecture Series, 2 April 2003.

"Climate Change: From Uncertain Science to Contentious Policy", The Boston Group Seminar, 16 April 2003. "Atmospheric Chemical Change, Air Pollution, and Climate", Union Lecture, 23rd General Assembly of IUGG, Sapporo, Japan, 3 July 2003.

"Is the Cleansing Capacity of the Atmosphere (OH Concentration) Changing?" invited talk, Presidential Symposium on the Chemistry of Global Climate Change, 226th Annual American Chemical Society Meeting, New York, 8 September 2003.

"Biocomplexity: Feedbacks Between Ecosystems and the Climate System" presentation to the National Science Foundation Biocomplexity in the Environment Awardees Meeting, Arlington, Virginia, 16 September 2003.

"Estimation of trace gas fluxes by inverse modeling", invited talk, AGU Fall Meeting, San Francisco, CA, 12 December 2003.

"Ensemble Climate Predictions using a Global Model Coupling Economics, Chemistry, Climate Dynamics and Ecosystems", Ecosystems Center, Marine Biology Laboratory, Woods Hole, MA, 16 December 2003.

"Global Warming: Complex Science to Contentious Policy", MIT Club, Portland, OR, 12 January 2004. "Global Warming", MIT Knight Science Journalist Lecture Series, 3 March 2004.

"Interaction of Climate Change with Regional Air Quality", invited lecture, EPRI Ninth Annual Global Change Seminar, Washington, D.C., 3 June 2004.

"Air pollution control: effects on climate", XXII MIT Global Change Forum, Venice, Italy, 10 June 2004. "Climate Change: Past, present and future", invited lecture, Cambiamenti Climatici Scenari e Politiche, Ateneo Veneto/FEEM, Venice, Italy, 8 June 2004.

"Climate Change: Integrating Science, Economics and Policy", The tenth C.H.B. Priestley Lecture, CSIRO, Aspendale, Australia, 6 December, 2004.

"Determination of methane emissions by region and generating process using inverse methods", invited lecture, AGU Fall Meeting, 17 December, 2004.

"Integrated Assessment using a Global Model coupling Economics, Chemistry, Climate Dynamics and Ecosystems", invited lecture, German National Colloquium on Global Change Research, Berlin, 23 November 2004.

"Interactions between Air Pollution and Climate", invited Multimedia lecture, EPRI Environmental Conference, Monterey, CA, 14 February 2005.

"Climate Change: Integrating Science, Economics and Policy", EPRI Global Change Committee, Monterey, CA, 15 February 2005.

"Climate Change Science", invited lecture, Meet The Scientists Program, Museum of Science, Boston, 11 February 2005.

"Climate and Air Quality: Integration of Science and Policy", Invited talk, EPRI Workshop on interactions of climate change and regional air quality", Washington D.C., 27 April 2005.

"Global Warming", Invited keynote address, 50th Reunion of the MIT Class of 1955, MIT, 3 June 2005. "Climate and Air Quality: Integration of Science and Policy", invited lecture, Gwangju Institute of Science and Technology, Gwangju, Korea, 14 June 2005.

"Climate Change: Integration of Science, Economics, and Policy", Keynote lecture, Tenth Anniversary GIST Symposium on Science, Technology and Policy for Sustainability, Gwangju, Korea, 15 June 2005.

"Uncertainties in climate forecasts: Coupled modeling of the economics and natural components of the Earth System", invited keynote lecture, First Workshop, International Postdoctoral Scientist Network for Earth System Science, Breckenridge, CO, 24 June 2005.

"Integrated View of Emission Scenarios: Probabilities, observational tests and feedbacks with other issues", invited talk, IPCC Workshop on New Emission Scenarios, IIASA, Laxenburg, Austria, 29 June 2005.

"Uncertainties in climate forecasts: Coupled modelling of the economic and natural components of the Earth System", invited talk, TEPCO Symposium, Tokyo, Japan, 1 September 2005.

"Understanding atmosphere-biosphere interactions: Lessons from an Integrated Global System Model and Inverse Modeling", invited talk, NAS/NRC, Irvine, CA, 30 September 2005.

"Climate Change: Past, Present, and Future", invited talk, 1st TOTAL University Symposium, MIT, 16 November 2005.

"Effects of Air Pollution Control on Climate", invited talk, 4th CONCAWE Symposium, Brussels, Belgium, 1 December 2005.

"Climate Change: Past, Present and Future", invited talk, ELIAS, MIT, Cambridge, MA, March 6, 2006. "Integration of the Science and Economics of Climate Change", invited talk, Climate Change and Governance Conference, Wellington, New Zealand, March 28, 2006.

"Integrating the Science and Economics of Climate Change and the Role of the Ocean", invited lecture, CSIRO Marine and Atmospheric Research Center, Hobart, Tasmania, April 6, 2006.

"Integrating the Issues of Energy and Environment", MIT Energy Forum, Cambridge, MA, May 3, 2006. "Sustaining a Habitable Earth: Lessons from Climate Change", invited lecture, University of Michigan, Ann Arbor, May 22, 2006.

"Is the self-cleaning capability of the atmosphere (OH concentration) changing?", invited lecture, University of Michigan, Ann Arbor, May 23, 2006.

"Climate Change: Forecasts and Lowering Risks", invited talk, TOTAL University Symposium, Paris, France, June 13, 2006.

"Climate and Energy: Uncertainties in Forecasts and the Problems of Scale", invited talk, MIT Energy Course, Cambridge, MA, June 15, 2006.

"Climate Change: Integration of Science and Energy Policy", invited talk, b-TEC/MIT Symposium, Barcelona, Spain, June 19, 2006.

"Forecasting Climate Change and Evaluating Policy", invited Plenary Lecture, International Building Performance Simulation Association, 2nd national conference, Simbuild 2006, Cambridge MA, August 3, 2006.

"How good are climate forecasts?", Environmental Business Council Seminar, invited talk, Boston MA, Sept. 12, 2006.

"Developments in Climate Science", invited talk, TOTAL-MIT-FRANCE Seminar, Cambridge MA, Nov. 13, 2006.

"How the Global Environment impacts America: The Science of the Issue", Invited Lecture and Discussion with the Newly Elected Members of Congress, Kennedy School, Harvard Univ., Cambridge MA, Nov. 30, 2006.

"Climate change: A growing scientific impetus for policy", Invited Oral Testimony to the Committee on Ways and Means, Hearing on Energy and Tax Policy, U.S. House of Representatives, Washington D.C., Feb. 28, 2007.

"Global Climate: State of Science", Invited Lecture, EPRI Environment Sector Council Meeting, San Francisco CA, March 8, 2007.

"The Global Climate Machine: How Climate Works", Knight Science Journalism "Great Global Crisis Boot Camp", Cambridge MA, March 21, 2007.

"Sustaining a Habitable Earth: Lessons from Climate Change", Invited Plenary Lecture, Presidential Symposium, Sustainability: A World View, American Chemical Society, 233rd National Meeting, Chicago IL, Mar. 25, 2007.

"Integrated Assessment of Global Climate Change", Invited Seminar, Harvard University, Cambridge MA, April 27, 2007.

"Some recent scientific results from the Advanced Global Atmospheric Gases Experiment (AGAGE) network", NOAA Earth System Research Laboratory, Global Monitoring Division Annual Meeting, Boulder CO, May 2, 2007.

"Recent global changes in greenhouse gases: how much and why?", MIT Earth Systems Initiative, Invited Seminar, Cambridge MA, May 7, 2007.

"Geo-engineering: Comments with a focus on effects of reducing solar radiative forcing", presentation to 26th MIT Global Change Forum, Cambridge MA, June 21, 2007.

"OH From Methyl Chloroform: Recent Results, Future Use & Alternatives", Max Planck Institute for Chemistry, Global OH Workshop, Mainz, Germany, June 25, 2007.

"The Climate Machine: Past, Present & Future", Invited Lecture, Kapitan Khlebnikov Expedition, Siberian Arctic, 10 July 2007.

"The Greenhouse Gamble: The Economics And Politics Of Climate", Invited Lecture, Kapitan Khlebnikov Expedition, Siberian Arctic, July 14, 2007.

"Arctic Climate: Now & 30 To 100 Years From Now", Invited Lecture, Kapitan Khlebnikov Expedition, Siberian Arctic, 16 July 2007.

"Climate: State Of Science With A Focus On The 2007 Intergovernmental Assessment", Keynote Address, National Conference of State Legislatures, Boston MA, August 7, 2007.

"Climate & Energy: Past, Present & Future", Rocky Mountain Natural Gas Strategy Conference & Investment Forum, Keynote Address, Denver CO, 14 August 2007.

"Global Climate Change: Science, Economics And Policy", Keynote Address, Mount Washington Observatory Symposium for Air & Climate, Mt. Washington NH, 7 September 2007.

"Global Climate Change: Science, Economics And Policy", Invited Talk, MIT Class of 1950, Annapolis, MD, 25 September 2007.

"Climate Change: Science, Economics And Policy", Invited Talk, Imperial College of London Centenary Meeting, Cambridge, MA, 26 September 2007.

"Anthropogenic Climate Change: Science, Economics And Policy", Invited Talk, Earth System Revolutions Symposium, ESI/CGCS, MIT, Cambridge, MA, 9 October 2007.

"Climate Change: Science, Economics And Policy", Presentation To The Knight Science Journalism Fellows, MIT, Cambridge MA, 11 October 2007.

"Climate Change: A Growing Scientific Impetus For Policy", Presentation To Southern Company Joint Board Forum, Atlanta, GA, 15 October 2007.

"Climate Change Science, Economics And Policy In The USA", Keynote Address, Universite Total Seminar, Houston, TX, October 22, 2007.

"Climate Change: A Growing Scientific Impetus For Policy", Plenary Lecture, Committee On Economic Development Of Australia, Symposium On Climate Change, Sydney, Australia, 15 November 2007.

"Climate Change: Science, Economics And Policy", Invited University Lecture, Worcester Polytechnic Institute, Worcester MA, December 10, 2007.

"Hydroxyl Radical Determination From Methyl Chloroform: Current Utility And Future Viability", Invited Lecture, AGU Fall Meeting, San Francisco CA, December 14, 2007.

"Climate Change: Science, Economics And Policy," invited seminar, MIT Club of Washington, Kenwood Country Club, Baltimore MD, January 15, 2008.

"Future Energy Options: Timetable for Action, Needed Scales and Implications, and Land Conversion For Bio-fuels," invited presentation, CERAWeek, Climate Change and Clean Energy Summit, Houston TX, February 11, 2008.

"Climate Change: Science, Economics And Policy," invited talk, MIT Focus On Climate Change Seminar Series, Cambridge MA, February 12, 2008.

"Climate Change: Integrating Science, Economics and Policy," invited talk, U.S. Geological Survey (USGS)-MIT First Global Climate Change Conference, MIT, March 5, 2008.

"Environmental Implications of Wind and Solar Power at Very Large Scales", invited talk, Twenty-seventh MIT Global Change Forum, Arlington, VA, March 28, 2008.

"Geo-Engineering: At Best a Last Resort, At Worst a Diversion with Dangerous Unintended Consequences?", invited talk, European Geophysical Union Great Geo-Engineering Debate, Vienna, Austria, April 15, 2008.

"Climate Change: State of the Science, and Implications for Economics and Policy", invited Plenary Presentation, KPMG 2008 Global Energy Conference, Houston, TX, May 21, 2008.

"Climate Change: State of the Science, and the Needed Actions for Mitigation and Adaptation", invited talk, Université Total: Ethical, Environmental and Social Responsibilities Conference, Calgary, Canada, May 29, 2008.

"Climate Change: State of the Science, and Implications for Economics, Policy and Natural Gas", invited Plenary presentation, COGA Natural Gas Strategy Conference and Investment Forum, Denver, CO, July 9, 2008.

"Climate Change: State of the Science, and Implications for Economics and Policy", invited talk, Symposium on Renewable Energy: Capturing the Sun, MIT, Cambridge, MA, August 4, 2008.

"Climate Change: Causes, Forecasts and Impacts," invited presentation to Inaugural Energy Fellows Symposium, MIT, Cambridge MA, September 22, 2008.

"Climate Change: State of the Science, and Implications for Economics, Technology and Policy," invited keynote address, Ontario Society of Professional Engineers, Symposium on Engineering in a Climate of Change, Ontario Science Center, Toronto, October 16, 2008.

"Current Estimates of Climate Change Risk: Results from recent MIT ensemble forecasts with and without stabilization policies", invited talk, 28th MIT Global Change Forum, Cambridge MA, October 30, 2008.

"Climate Change: Causes, Forecasts, Impacts & New Energy at Scale," presentation to Université Total Symposium, MIT, Cambridge, MA, November 11, 2008.

"Recent Global Changes in Greenhouse Gases: How much and why?", invited lecture, S.U.N.Y Stonybrook, NY, November 19, 2008.

"The Future of Energy: Climate Change & New Energy Systems to Mitigate its Impacts," invited presentation to Total Symposium, Marseilles, France, November 20, 2008.

"Current and Future Emissions and Concentrations of Trace Gases Impacting the Stratosphere," Invited lecture, AGU Fall Meeting, San Francisco, CA, December 15, 2008.

"Climate change: Integrating Science, and Economics," Invited Union Lecture, AGU Fall Meeting, San Francisco, CA, December 22, 2008.

"The climate machine: Past, present and future", Invited Lecture, Clipper Odyssey Expedition, New Zealand, January 18, 2009.

"The greenhouse gamble: The economics & politics of climate", Invited Lecture, Clipper Odyssey Expedition, New Zealand, January 22, 2009.

"USA, New Zealand and other regional climates up to 100 years from now", Invited Lecture, Clipper Odyssey Expedition, New Zealand, January 23, 2009.

"Climate change: Integrating science, economics, technology and policy", Invited Lecture, MIT Lincoln Laboratory, February 13, 2009.

"The future of wind power as a source of energy in the world", Invited Lecture, Rutgers Energy Institute Fourth Annual Energy Symposium, Rutgers University, NJ, May 6, 2009.

"Optimal source/sink estimation using measurements, process models & 3D global circulation models", Invited Lecture, Symposium on the Greenhouse Gas Information System, DOE Sandia National Laboratory, Albuquerque, NM, May 21, 2009.

"21st Century Climate Change: Warmer Forecasts", Invited Lecture, Boston Society of Civil Engineers, Boston, MA, May 14, 2009.

"New MIT Forecasts of 21st Century Climate Change", Invited Lecture, Cambridge City Hall Energy Forum, Cambridge, MA, April 30, 2009.

"Probabilistic Forecasts for 21st Century Climate Based on Uncertainties in Emissions", Invited Talk, European Geophysical Union Annual Meeting, Vienna, Austria, April 23, 2009.

"Climate change: integrating science, economics, technology and policy", Invited Talk, Carbon Markets USA Symposium, Washington DC, September 21, 2009.

"Climate Change Science, Economics, Technology and Policy: Implications for future Energy & High Technology Industries", Keynote Address, EPOCH-ILP Workshop, Taipei, Taiwan, October 12, 2009.

"Climate Change Science, Economics, Technology and Policy: Implications for future Energy Producers & Users", Invited Talk, ILP Special Meeting, Bangkok, Thailand, October 15, 2009.

"Climate Change: Implications for Developing Countries & their Industries", Invited Lecture, ILP Members Workshop, Manila, Philippines, October 13, 2009.

"The Great Climate-Gate Debate", Panelist, MIT, Thursday, December 10, 2009.

"Climate Change: Integrating Science, Economics, Technology and Policy", Invited Opening Lecture, KFAS-Kuwait Center Conference, Kuwait City, January 18, 2010.

"Climate Change Science, Economics, Technology and Policy: Implications for future Energy, Agriculture and High Technology Industries, Invited Lecture, MIT in Japan Conference, Keidanren Kaikan, Tokyo, January 22, 2010.

"Arctic Warming: Risks for Methane Emissions, Sea Ice Loss & Oceanic Overturn", Invited Lecture, The Cambridge Forum, Cambridge, MA, January 28, 2010.

"Climate Change; Integrating Science, Economics, Technology and Policy", Invited Seminar, Boston University, February 26, 2010.

"Advances in Natural Systems Representation in the MIT Integrated Global System Model (IGSM)", Presentation to DOE Integrated Assessment Workshop, March 29, 2010.

"Climate Change: Challenging Science, Economics, Technology and Policy", MIT Alumni Day Keynote Lecture, June 4, 2010.

"Climate Change: Challenging Science, Economics, Technology and Policy", Bank of America Merrill Lynch Clean Tech at MIT Day, June 16, 2010.

"Climate Change: Challenging Science, Technology and Policy", Invited Lecture, Cornell Earth & Atmospheric Sciences Fall Seminar Series, September 15, 2010.

"Climate Change: Impacts and Policy", MIT Energy Futures Conference, Principality of Monaco, September 23, 2010.

"Climate Change: State of the Science, Forecasts & New Energy at Scale", Invited Lecture, MIT-IEEJ Energy & Global Change Workshop, Tokyo, September 30, 2010.

"Optimal Source/Sink Estimation using Measurements, Process Models & 3D Global Circulation Models", Invited seminar, Tokyo Institute of Technology, Yokohama, Japan, October 1, 2010.

"Assessing Metrics and Simplified Aviation Climate Impact Models." Presentation at DOT-FAA-ACCRI PIs Meeting, Constitution Center, Washington, D.C., November 18, 2010.

"Toward a Comprehensive Earth System Model", Invited Lecture, Sackler Colloquium: Fostering Advances in Inter-Disciplinary Climate Science, National Academy of Sciences, Washington, D.C., April 1, 2011.

"Climate Forcing and Climate Change in the Amazon Region and the Globe." Presentation at Conferencia Brazil-MIT, Cambridge, MA, April 15, 2011.

"The Science of Climate Change", Presentation at MIT-China Low Carbon Leadership Program, Cambridge, MA, April 19, 2011.

"Rethinking Climate Change: The Next 100 Years", Presentation at MIT Panel "Rethinking Climate Change", Colloquium for Earth Week, April 21, 2011.

"Why Do We Need Earth System Models?" Presentation at Forum France-MIT, Paris, France, June 29, 2011. "Hot Issues in Climate Science," Sponsors' Webinar Series #1, MIT Joint Program on the Science and Policy of Global Change, September 15, 2011.

"Potential Climatic Impacts and Reliability of Large-Scale Onshore and Offshore Wind Farms", Presentation to DOE's Climate and Earth System Modeling Principal Investigators' Meeting, Washington, D.C., September 21, 2011.

"Climate Policy: Why Are We Waiting?" Presentation at Knight Science Journalism Event, "Climate Change: When Policymakers Fail", MIT, October 4, 2011.

"Climate Change: Current Trends, Forecasts and Implications for Economics and Policy." Invited Seminar, National Institute for Environmental Studies, Tsukuba, Ibaraki, Japan, October 25, 2011.

"Climate Change: Current Trends, Forecast and Policy," Invited Seminar at Tokyo Institute of Technology, Yokohama, Japan, October 26, 2011.

"Advanced Global Atmospheric Gases Experiment (AGAGE): An NDACC Cooperating Network", Presentation at 20th Anniversary Symposium of Network for the Detection of Atmospheric Composition Change, Reunion Island, November 10, 2011.

"The Science of Global Climate Change", Presentation at MIT-China Low Carbon Leadership Program, Cambridge, MA, December 5, 2011.

"Climate Change", Presentation at MIT Environmental Research Forum, Cambridge, MA, December 15, 2011. "Climate Change: Challenging Science, Technology, Economics and Policy", Collins Lecture, Massachusetts General Hospital, Boston, MA, December 20, 2011.

"Climate: Observations, Forecasts, Economics, Technology& Policy", invited lecture, CENSAM Fifth Annual Workshop, National University of Singapore, January 12, 2012.

"Climate Change: What Has Happened and Why?", invited lecture, Classic Seychelles Odyssey Cruise, January 28-February 10, 2012.

"Climate Change: Predicting the Future, and the Greenhouse Gamble", invited lecture, Classic Seychelles Odyssey Cruise, January 28-February 10, 2012.

"Climate Change: Economics and Policy", invited lecture, Classic Seychelles Odyssey Cruise, January 28-February 10, 2012.

"Development and Application of Earth System Models," invited address, at CSIRO, Center for Marine & Atmospheric Research, Aspendale, Victoria, Australia, February 20, 2012.

"Development of Earth System Models and Application to Climate Policy", invited lecture at Victoria University & NIWA, Wellington, New Zealand, February 23, 2012.

"Uncertainties in Global Change Modeling" and "The MIT Integrated Global Systems Modeling Experience", invited address, Vale Technological Institute for Sustainable Development, International Workshop on Global Change and Sustainability, Belém, Pará, Brasil, March 7, 2012.

"The MIT IGSM (Integrated Global System Model) Modeling Experience", invited address, Vale Technological Institute for Sustainable Development, International Workshop on Global Change and Sustainability, Belém, Pará, Brasil, March 8, 2012.

"National Emissions Verification by Merging Earth System Measurements, Global Social Data and Earth System Models," keynote address at 40th NOAA ESRL Global Monitoring Annual Conference, Boulder, CO, May 16, 2012.

"Development and Application of Complex Integrated Assessment Models," invited presentation, NAS (USA)-Royal Society (UK) Sackler Forum on Integrated Assessment Models & Future Needs of Climate Change Research, Kavli Royal Society International Centre, UK, September 19, 2012.

"The Science of Climate & Implications for Economics, Technology & Policy", invited lecture, MIT-China Low Carbon Energy Leadership Program, MIT, August 31, 2012

"The Science of Global Climate Change & Implications for Economics, Technology & Policy", invited lecture, MIT-China Low Carbon Energy Leadership Program, MIT, September 14, 2012.

"Improvements in Climate Science, Technology and Policy & Solutions to Climate Change Challenges", presentation to National Climate Change Secretariat, Office of the Prime Minister, Singapore, October 8, 2012

"Climate Change: A Challenge to Science, Economics, Technology & Policy", invited presentation to National University of Singapore (NUS) & SMART, Singapore, October 9, 2012.

"Global Climate Change: Science & Implications for Economics, Technology & Policy", invited lecture, MIT-China Low Carbon Energy Leadership Program, MIT, October 30, 2012.

"Climate Change: Current Trends, Forecasts & Implications for Energy Technology & Policy", invited lecture, Total-MIT Seminar: Energy Agenda in a World of Crises, MIT, November 7, 2012.

"Roles of Aviation Emissions on CH_4, O_3 and NO_x Distributions: Multi-Model Results", presentation at DOT-ACCRI Third Annual Symposium, Virginia Beach, VA, November 27, 2012.

"Integrated Earth System Models: Critical Tools for Environmentally and Economically Beneficial Development of Future Energy, Food and Water Resources", Invited Keynote Lecture, 100th Indian Science Congress, D. N. Wadia Session on Earth System Sciences, Kolkata, India, January 4, 2013.

"Predicting the Future with Earth System Models: Critical Tools for Environmentally and Economically Beneficial Development of Future Energy, Food and Water Resources", Invited Keynote Address to Awardees, Jagadis Bose National Science Talent Search (JBNSTS), Annual award Ceremony, Jagadis Bose Centre, Kolkata, India, January 5, 2013.

"The MIT Integrated Global System Model: A Guide for Environmentally and Economically Beneficial Development of Energy, Food and Water Resources," Visiting Scholar, invited address to Faculty Fellows, Martin Institute for Law and Society, Stonehill College, Easton, MA, March 13, 2013.

"Climate Change Science: What we know and what we do not know," invited address at Workshop eni-MIT "Global Change", Eni Corporate University, San Donato Milanese, Italy, March 25, 2013.

"Climate Change and Implications for Future Water and Energy Resources", invited address at Eni Workshop: Energy and Water Nexus, San Donato Milanese, March 26, 2013

"Climate Change: Its Potential Impact on Major Cities," invited presentation to Partners' annual meeting at MIT Center for Real Estate, April 5, 2013.

"Global Measurements and Cycles of Atmospheric Gases: Past, Present, and Future", Keynote Speaker at Symposium in Honor of Distinguished Professor Ray F. Weiss, Scripps Institute of Oceanography, University of California at San Diego, La Jolla, CA, May 29, 2013.

"The MIT Integrated Global System Model" invited speaker, Global Energy Outlook and the Big Transitions, Aspen Seminars for Leaders, Aspen Institute Italia, Venice, Italy, July 13, 2013.

"The MIT Integrated Global System Model: A Guide for Environmentally and Economically Beneficial Development of Energy, Food and Water Resources," invited talk, CNPEM-MIT Workshop, Campinas, Brazil, July 18, 2013.

"The Science of Global Climate Change & Implications for Economics, Technology & Policy," invited talk, MIT–China Low Carbon Energy Leaders Program, MIT, Cambridge, MA, September 9, 2013.

"Climate Change: State of Science & Implications for Technology & Policy," invited talk, MITEI Fall Research Conference, MIT, Cambridge, MA, October 3, 2013.

"Methane Concentrations, Sources and Sinks: Past, Present and Future", invited talk at IPIECA Workshop: Short-Lived Climate Forcers, Eni, Rome, Italy, October 8, 2013.

"Climate Change and Mitigation", invited presentation with Henry Jacoby to MITEI External Advisory Board, MIT, Cambridge, MA, October 25, 2013.

"Smart Cities Grow But Also Sustain the Environment", invited panelist, "Smart Cities: the Future of Urbanisation", Transform Africa Summit, Kigali, Rwanda, October 30, 2013.

"Climate Change Science: Implications for Economics, Technology, and Policy", TOTAL Seminar, MIT- France Program, MIT, Cambridge, MA, November 6, 2013.

"Integrated Global System Models: New Tools for Environmentally and Economically Beneficial Development of energy, Food and Water Resources", invited lecture, Center for Integrated Earth System Science, University of Texas at Austin, November 18, 2013.

"The MIT Integrated Global System Model: A Facility for Assessing and Communicating Climate Change Uncertainty," invited presentation, American Geophysical Union Fall Meeting, San Francisco, CA, December 11, 2013.

"Air Pollution & Climate Change: Trends, Causes, & Future Impacts", Invited Lecture for Lab4Energy Educational Project of Fondazione Eni Enrico Mattei of Milan, Italy, videotaped in Cambridge, MA, February 14, 2014.

"Ozone Depletion and Climate Change: Analysis of Science and Policy using Global Measurements and a Global System Model", Invited presentation at Symposium in Honor of Professor Mario Molina, Robert Paine Scripps Forum, University of California at San Diego, La Jolla, CA, May 12, 2014.

"Climate Change: (1) Evidence, Causes & Projections: MIT & IPCC, (2) Impacts, Mitigation & Adaptation,(3) Effects on Economy & Business", Invited presentation to MIT ILP Japan Members, Tokyo, Japan, August 19, 2014.

"Climate Change: (1) Evidence, Causes & Projections, (2) Effects on Business & Economies, (3) Impacts on the Oceans", Invited presentation to Epoch-MIT ILP, Delta Electronics Foundation, Taipei, Taiwan, August 21, 2014.

"Climate Change & Air Pollution: Science, Impacts and Adaptation with an African focus", Invited Lecture, University of Rwanda, Kigali, Rwanda, October 22, 2014.

"Climate Change Science: Implications for Economics, Technology and Policy", Invited presentation at Université Total Seminar, MIT-France Program, MIT, Cambridge, MA, November 10, 2014.

"Climate Change: Past, Present and Possible Futures", Invited presentation, MIT Alumni Travel, M.S. Caledonian Sky, January 3, 2015.

"The Climate Gamble: Economics, Technology and Policy", Invited presentation, MIT Alumni Travel, M.S. Caledonian Sky, January 6, 2015

"Lowering risks of climate change by mitigation and adaptation", Invited panelist, "Looking Forward to Energy in 2025," Plenary Panel at 10th annual MIT Energy Conference, MIT, Cambridge, MA, February 28, 2015

"Climate Change & Air Pollution: Science, Impacts & Adaptation with an African Focus", Invited Lecture, University of Rwanda/CST/CBE, Kigali, Rwanda, March 26, 2015

"Climate Science & the Importance of Land & Water", Presentation at Symposium on Land & Water Resources: looking into the future, MIT, April 29, 2015

"The Climate Challenge: Toward a Low-Carbon Energy Economy", Invited presentation, Low-Carbon Energy Economy Workshop, MIT, Cambridge, MA, May 26, 2015

"Status of the Advanced Global Atmospheric Gases Experiment (AGAGE): An NDACC Cooperating Network", Invited presentation, NDACC Steering Committee Meeting, La Jolla, CA, October 13, 2015

"Introduction to Atmospheric & Climate Science," Invited Lecture, Inauguration of the Masters degree in Atmospheric & Climate Science, College of Science & Technology, University of Rwanda, Kigali, Rwanda, November 4, 2015

"Climate Change: Science and Policy," Invited presentation, Newton Inspires Forum, Newton Schools Foundation, Newton, MA November 9, 2015

"Climate Change: Science, Economics, Technology and Policy," Invited presentation, Université Total, MIT-France Program, MIT, Cambridge, MA, November 10, 2015

"Meeting the Climate Challenge of 2ºC: A Study using an Integrated Economics & Earth System Model", Invited Keynote Lecture, Mario Molina Symposium, American Meteorological Society, New Orleans, LA, January 12, 2016.

"Climate Change: the Greenhouse Gamble and the Challenge of 2ºC", Invited Talk, MIT on CLIMATE = Science + Action Symposium, MIT, January 27, 2016.

"Climate Change: Science, Impacts, Solutions and Adaptation with an African Focus," Invited Lecture, Carnegie Mellon University, Kigali campus, Rwanda, April 21, 2016.

"Lowering Risks of Climate Change: the Greenhouse Gamble and the Challenge of 2ºC", Invited Panelist, MIT Sustainability Connect 2016, MIT, May 9, 2016.

"Benefits of a World-class Climate and Greenhouse Gas Observatory in the Azores," Invited Presentation, Atlantic Interactions: Knowledge, Climate Change, Space and Oceans, 2nd Workshop, FCT – Fundação para a Ciência e a Tecnologia, University of the Azores, Ponta Delgada campus, Portugal, June 27, 2016.

"Benefits of a World-class Climate and Greenhouse Gas Observatory in the Azores," Invited Presentation, Azores International Research (AIR) Center Meting, European Commission, Brussels, Belgium, September 18, 2016.

"Wild Weather and Climate Change," Invited Webinar designed specifically for the sponsor membership of the M.I.T. Joint Program on the Science and Policy of Global Change, September 29, 2016.

"Advanced Global Atmospheric Gases Experiment (AGAGE): An Overview," Invited Presentation, Network for Detection of Atmospheric Composition Change (NDACC), International Steering Committee Annual Meeting, Bremen, Germany, October 18, 2016.

"Theme Group for Combining Trace Gas Data from NDACC and Cooperating Networks," Invited Presentation, Network for Detection of Atmospheric Composition Change (NDACC), International Steering Committee Annual Meeting, Bremen, Germany, October 19, 2016.

"Advanced Global Atmospheric Gases Experiment (AGAGE): An Overview," Invited Presentation, Joint Meeting of WMO-GAW Reactive Gases Advisory Group and Advanced Global Atmospheric Gases Experiment (AGAGE) Scientists, Stanley, Tasmania, November 12, 2016.

"Climate Change: Physics, Chemistry, Biology, Economics, Technology & Policy," Invited Presentation, American Chemical Society Northeastern University Student Chapter, Boston, MA, November 17, 2016.

"Understanding Climate Risks: Past, Present and Possible Futures," Invited Lecture, MIT Alumni Circumnavigation of Iceland, M.S. Ocean Diamond, June 6, 2017.

"Winning the Climate Gamble: Economics, Technology and Policy," Invited Lecture, MIT Alumni Circumnavigation of Iceland, M.S. Ocean Diamond, June 9, 2017.

"Climate Change Risks and the Challenge of Avoiding 2°C Warming," The Bose Institute Centenary Invited Lecture, The Bose Institute, Kolkata, India, August 30, 2017.

"The Dangers of Climate Change and the Task of Avoiding 2°C Warming," Invited Lecture, The Indian Institute of Science Education and Research, Kolkata, India, August 31, 2017.

"Global Warming: The Science, Risks & Realities of Climate Change. Can We Still Avoid the Tipping Point?" presentation at EAPS Development Department event, The Garden Court Hotel, Palo Alto, California, November 16, 2017.

"Advanced Global Atmospheric Gases Experiment (AGAGE): An Overview," Invited Presentation, Network for Detection of Atmospheric Composition Change (NDACC), International Steering Committee Annual Meeting, Boulder, CO, November 7, 2017.

"Theme Group for Combining Trace Gas Data from NDACC and Cooperating Networks," Invited Presentation, Network for Detection of Atmospheric Composition Change (NDACC), International Steering Committee Annual Meeting, Boulder, CO, November 7, 2017.

"Forty years of global measurements of the trends of ozone depleting and greenhouse gases, and estimation of the sources and sinks that drive them", MIT EAPS Department Lecture Series, March 23, 2018.

"Climate Change: Science, Forecasts, Risks & Responses", Invited Presentation, University of Texas Energy Institute Board, Austin, TX, April 4, 2018.

"Climate Change: Causes, Impacts, Solutions and Adaptations with an African Focus", Invited Keynote Presentation, College of Science & Technology, University of Rwanda, Kigali, Rwanda, January 11, 2019.

"Climate Change: Trends, Extremes & the 2°C Challenge," Invited Presentation, New Dow Leadership Summit, Hollywood, FL, February 20, 2019.

"Understanding Climate Risks: Past, Present and Possible Futures," Invited Presentation, Arctic Svarlbard Expedition, M.V. L'Austral, June 24, 2019.

"Winning the Climate Gamble: Economics, Technology and Policy," Invited Presentation, Arctic Svarlbard Expedition, M.V. L'Austral, June 28, 2019.

"Atmospheric Chemistry: A Century of Expanding Scientific Discovery and Societal Relevance," Invited Keynote Speaker, American Meteorological Society, January 14, 2020.

"Case Study: The Benefit of an AGAGE-type Station for Addressing the Current Knowledge of Poor non-East Asian CFC-11 Emissions," Invited Speaker, Ozone Research Managers 11, UN Environment Program, Speaker, October 7, 2020.

"Unexpected Ups and Downs in Emissions of Ozone-Depleting Gases from Eastern China: Lessons for Emission Verification," Invited Lecturer, Harvard AEC Seminar Series, October 22-21, 2021

"Climate Forecasts Now Reality, COP-26 and Multiple Stresses in the Earth System," Invited Speaker, IEEE Tech Talk on Clean Energy and Decarbonization, November 9, 2021