John E. Mak, Ph.D.

School of Marine and Atmospheric Sciences
Stony Brook University
john.mak@stonybrook.edu

Employment History

2014-present	Professor, School of Marine and Atmospheric Sciences, Stony Brook University
June 2009-Sept 2010	Program Director, Atmospheric Chemistry Program, National Science Foundation
Sept 2007-Feb 2009	Associate Program Director, Atmospheric Chemistry Program, National Science Foundation
2001-2014	Associate Professor, Institute for Terrestrial and Planetary Atmospheres/ School of Marine and Atmospheric Sciences, Stony Brook University
1995-2000	Assistant Professor, Institute for Terrestrial and Planetary Atmospheres/Marine Sciences Research Center, SUNY-Stony Brook
1992-1994	Department of Energy Global Change Distinguished Postdoctoral Fellow, Lawrence Livermore National Laboratory

Education

April 1992	Ph.D., Oceanography, Scripps Institution of Oceanography, UC San Diego (NCAR Graduate Fellow, 1989-1992)
June 1987	B.S., Chemistry, University of California, Irvine

Postdoctoral Scientists

May 2023- present	Dr. DanDan Wei
Mar 2020-Jan 2022	Dr. Philip Place (now faculty at UNH)
Jan 2010-Sept 2012	Dr. Zhihui Wang (now at Microsoft)
Jan 2011-July 2011	Dr. Key Hong Park (now faculty at KOPRI)
1995-1997	Dr, Wenbo Yang

Students

Graduate Students

Current

Sept 2020-present	Julia Marcantonio (PhD) (RA supported)

Graduated

Sept 2018-Dec 2023	Cong Cao (**PhD 2023**) (RA supported)
Sept 2009-2017	Luping Su (**PhD 2017**) (RA supported)
Sept 2010-Jan 12	Wei Lei Wang (**MS**) (RA supported)
Aug 2004-Dec 10	Key Hong Park (**PhD, Dec 2010**) (RA supported)
June 2004-Dec 09	Zhihui Wang (**PhD, Dec 2009**) (RA supported)
Aug 2005-Aug 09	Tracey Evans (**MS**, **August 2009**) (AGEP Fellow; NSF BRIDGES Fellow)
June 2004-April 08	Kolby Jardine (**PhD, May 2008**) (NSF BART Fellow)
Sept 1998-May 04	Jennifer Funk (**PhD, 2004**, Dept. of Ecology and Evolution; co-advisor with M. Lerdau)
Feb 2000-Jan 04	Douglas Potts (**MS, Jan 2004**; co-advisor with R. Cerrato)
Aug 2000-Dec 03	Laura Cottrell (**MS, Dec 2003**)
Sept 98-Oct 99	Charles Bartolotta, physics teacher, Valley Stream South High School (MSE)
Sept 97-May 00	Theodore Sandomenico (**MS, May 2000**)
June 95-Dec 97	Gabriel Kra (**MS, December 1997**)

Undergraduate Students

Dec 2014-2017	Alexis Scida, student research assistant (currently in PhD Program, Chemistry, OSU)

May 2013-2014	David Benjamin, senior thesis project student
May 2013-Sept 2013	Lani Kai Ritter, student research assistant
Feb 2011-May 13	Kimberly Lamont, research assistant
Feb 2011-May 12	Bart Piscitello, student research assistant
2008-June 2009	Alex Eisen-Cuadra, student research assistant
2006-2007	Benjamin Hayashi, student research assistant
	Kyle Russell, student research assistant
Summer 2000	Russell Homan, Princeton University, REU participant

Undergraduate Students (cont.)

Jan 1999-Aug 2000	Laura Cottrell (Senior Honors thesis advisor, Magna cum Laude, BS, Environmental Chemistry, 5/00); student research assistant
Jan 1999-May 1999	Diane Kenski, student research assistant; RAIRE fellow, May 1999
Jan 1997-Aug 1997	Vitaly Bokser, student research assistant
June 1996-Aug 1996	Joshua Faber, student research assistant
Sept. 1995-May 1996	Luis Franco III, student research assistant
May 1995-May 1996	Daniel O'Sullivan, student research assistant

High school students

Sumer 2016, 2017	Gilbert Spencer, Half Hollow Hills (B.S., Princeton)
Summer 2015	Patrick Hanaj, Mount Sinai High School (B.S., Harvard)
Summer 2014	Rachel Heymach, Simons Fellow (B.S., Stanford)

Research Support

Current:

Project Title:	EAGER: Investigating the methane chlorine removal mechanism in the western tropical Atlantic (lead PI, w Knopf))
Funding Agency:	National Science Foundation
Total Amount:	**$299,800**
Effective:	March 2024-2026

Project Title:	Collaborative Research: GOTHAAM (Greater New York Trace Gas, Halogen, and Aerosol Airborne Mission) (lead PI)
Funding Agency:	National Science Foundation
Total Amount:	**$4,400,000 ($776,000 to SBU)**
Effective:	August 2020-2026

Past Research Support

Project Title:	Quantifying the impact of biogenic and anthropogenic emissions on the atmospheric composition of the New York City Metro Area (co-PI)
Funding Agency:	NOAA
Total Amount:	**$751,000 ($174,000 to Mak)**
Effective:	September 2020-2023
Project Title:	Increasing Public Awareness and Understanding of Ozone Pollution in China through Climate Conversations
Funding Agency:	US Department of State
Total Amount:	**$180,000 (very little to Mak)**
Project Title:	*EAGER:* An investigation of the unusual clumped isotope abundance of atmospheric carbon monoxide (PI; with Henkes, Geosciences)
Funding Agency:	National Science Foundation
Total Amount:	**$299,000**
Effective:	May 2019-2022
Project Title:	Evaluation of wintertime VOC trends from a fixed site in NYC (PI)
Funding Agency:	NESCAUM
Total Amount:	**$45,000**
Effective:	July 2019-2021
Project Title:	Quantification of anthropogenic VOCs from the Long Island Sound region (PI)
Funding Agency:	NESCAUM
Total Amount:	**$38,000**
Effective:	May 2018-2020
Project Title:	Identifying and Quantifying select VOCs during LISTOS 2018 (PI)

Funding Agency: NYSERDA
Total Amount: **$37,000**
Effective: June 2018-May 2019
Project Title: Collaborative Research: Reconstruction of Carbon Monoxide in the Pre-Industrial Arctic Atmosphere from Ice Cores at Summit, Greenland (co-PI)
Funding Agency: National Science Foundation
Total Amount: **$76,350 (to Mak)**
Effective: June 2015-May 2017

Past Research Support (cont.)

Project Title: Collaborative Research: Using stable isotopes to constrain the atmospheric carbon monoxide budget over the last 20,000 years (PI)
Funding Agency: National Science Foundation
Total Amount: **$225,000 (to Mak)**
Effective: Jan 1 2015-Dec 31 2019
Project Title: Comparison of past and present sources and sinks of atmospheric carbon monoxide using stable isotopes (sole PI)
Funding Agency: National Science Foundation
Total Amount: **$753,000**
Effective: October 2011-September 2015
Project Title: Biogenic Volatile Organic Compound Emissions and Fates at the Urban-Rural Interface and Their Contribution to Secondary Organic Aerosol Formation During SOAS (Southern Oxidant Aerosol Study) (Mak, lead PI)
Funding Agency: Environmental Protection Agency
Total Amount: **$399,990 (~$200,000 to Mak)**
Effective: May 2013-April 2015
Project Title: Acquisition of a PTR-TOFMS and IRMS for Research within the Atmospheric Sciences (MRI; substitute PI: D Knopf*)
Funding Agency: National Science Foundation
Total Amount: **$840,000**
Effective: September 2010-September 2012
Project Title: Application of the isotopes of carbon monoxide as tracers of current OH trends and preindustrial CO chemistry (sole PI)
Funding Agency: National Science Foundation
Total Amount: **$833,000**
Effective: September 07-July 2012
Project Title: RAPID: Frozen sampling: a proposed new platform for collecting continuous vertical profiles within and above the convective boundary layer (substitute PI: Knopf*)
Funding Agency: National Science Foundation
Total Amount: **$65,000**
Effective: May 2011-May 2012
Project Title: RAPID: Deployment of PTR-TOFMS to Manitou Forest (substitute PI: Knopf*)
Funding Agency: National Science Foundation
Total Amount: **$180,000**
Effective: May 2010-May 2011
Project Title: Using the isotopes of carbon monoxide as tracers of current global OH trends and pre-industrial CO sources (sole PI)
Funding Agency: National Science Foundation
Total Amount: **$876,470**

Effective:	May 2003-October 2007
Project Title:	Determination of the production rate of ^{14}C from Direct Measurements (sole PI)
Funding Agency:	National Science Foundation
Total Amount:	**$105,000**
Effective:	August 2001-July 2000
Project Title:	Isotopic Studies of the Sources and Sinks of Atmospheric Carbon Monoxide
Funding Agency:	National Science Foundation CAREER (sole PI)
Total Amount:	**$530,000**
Effective:	June 1998-May 2002
Project Title:	Reconstruction of the Effects of Brown Tide Blooms on the Growth of Hard Clams Using Shell Microgrowth Analysis (with R. Cerrato, PI)
Funding Agency:	New York Sea Grant Institute
Total Amount:	**$169,000**
Effective:	February 2001-January 2003
Project Title:	*MRI:* Acquisition of an isotope ratio mass spectrometer for research in the ocean and atmospheric sciences (Cochran, PI)
Funding Agency:	National Science Foundation
Total Amount:	**$375,000**
Effective:	1996-1998
Project Title:	Isotopes of Atmospheric Carbon Monoxide (sole PI)
Funding Agency:	National Science Foundation
Total Amount:	**$250,000**

Invited Seminars (past 15 years)

September 2022	GOTHAAM: Goals and Architecture, NOAA/DOE/NSF/NASA AGES meeting, Boulder, Co.
March 2022	GOTHAAM, NOAA STAQ meeting (remote)
November 7 2015	Recent Advances in the Marine and Atmospheric Sciences, **Manhattan College**
October 19 2015	Atmospheric Chemistry Processes Past and Present, **University of Rhode Island**
September 5 2014	Atmospheric Chemistry Processes Past and Present, **Stony Brook University**
October 4 2013	The Oxidation State of the Atmosphjere: Past, Present and Future, **University of Rochester**
February 22, 2013	Stable isotopes of Carbon Monoxide from Ice, **South Pole Ice Core Planning Workshop**, Boulder, CO
February 15, 2013	From Airplanes to Ice Cores: An Historical Perspective on the Origin and Fate of Atmospheric Carbon Monoxide, **NASA Goddard Institute for Space Studies/Columbia University**
February 21, 2012	From Airplanes to Ice Cores: An Historical Perspective on the Origin and Fate of Atmospheric Carbon Monoxide, **UC Berkeley**
November 2, 2011	Constraining the global budget of carbon monoxide using ^{13}C and ^{18}O in atmospheric CO, **Korea Research Institute of Standards and Science (KRISS)**, Daejeon, South Korea
July 28, 2011	From Airplanes to Ice Cores: An Historical Perspective on the Origin and Fate of Atmospheric Carbon Monoxide, **MIT**
April 22, 2011	Constraining the global budget of carbon monoxide using ^{13}C and ^{18}O in atmospheric CO, **Korea Polar Research Institute**, Incheon, South Korea
April 19, 2011	Investigating the abundance, origin and fate of reactive volatile organic compounds within a forest canopy using PTR-TOFMS, **Korea University**, Seoul, South Korea
April 18, 2011	Investigating the abundance, origin and fate of reactive volatile organic compounds within a forest canopy using PTR-TOFMS, **National Institute for Environmental Research**, Seoul, South Korea
October 28 2010	HIPPO: The HIAPER Pole To Pole Observations Project, **ICARE**, Toulouse, France
April 11, 2010	From Airplanes to Ice Cores: an Historical Perspective on the origin and fate of atmospheric carbon monoxide, **Washington State University**

April 1, 2010	From Airplanes to Ice Cores: an Historical Perspective on the origin and fate of atmospheric carbon monoxide, **U Illinois Urbana-Champaign**
March 12, 2010	A History of Biomass Burning Based on the Stable Isotopes of Carbon Monoxide from Ice Cores, **UC Irvine**
February 25, 2010	From Airplanes to Ice Cores: an Historical Perspective on the origin and fate of atmospheric carbon monoxide, **Scripps Institution of Oceanography, UC San Diego**
September 11, 2009	From Airplanes to Ice Cores: a History of Atmospheric Carbon Monoxide, **Stony Brook University**
April 12, 2008	^{14}CO in the Northern Hemisphere, **National Institute for Water and Atmospheres**, Crown Research Institute, New Zealand
February 26 2008	Investigating the stability of the global tropospheric oxidation potential using atmospheric ^{14}CO, **California Institute of Technology**
February 25 2008	Inverse Modeling of the isotopes of atmospheric carbon monoxide, **Jet Propulsion Laboratory, NASA**
July 12 2007	Constraints on the global atmospheric methyl bromide budget using stable isotopes, **National Science Foundation**
June 25 2007	Using the isotopes of carbon monoxide as tracers of current global OH trends, **Max Planck Institute for Chemistry, Mainz**
June 17 2007	Constraints on the global atmospheric methyl bromide budget using stable isotopes, **Laboratoire de Glaciologie et Geophysique de l'Environnement du CNRS**, Grenoble, France

Teaching

Spring 2024	ATM 102 Weather and Climate. Enrollment: 227
Fall2023	ATM 345, Atmospheric Dynamics and Thermodynamics (w E. Chang);
	MAR 541 Foundations of Atmospheric Sciences I (w D. Knopf, M. Zhang)
Spring 2023	ATM 102 Weather and Climate. Enrollment: 240
Fall 2022	ATM 345, Atmospheric Dynamics and Thermodynamics (w M. Zhang);
	MAR 541 Foundations of Atmospheric Sciences I (w D. Knopf, M. Zhang)
Spring 2022	ATM 102 Weather and Climate. Enrollment: 245
Fall 2021	ATM 345, Atmospheric Dynamics and Thermodynamics (w E. Chang); MAR 541,
	Foundations of Atmospheric Sciences I (w. D. Knopf and M. Zhang)
Spring 2021	ATM 102, Weather and Climate. Enrollment: 200
Fall 2020	MAR 596, Principles of Atmospheric Chemistry
Spring 2020	ATM 102, Weather and Climate. Enrollment: 233
Fall 2019	MAR 541, Foundations of Atmospheric Sciences I
Spring 2018	ATM 102, Weather and Climate. Enrollment: 219
	MAR 596, Principles of Atmospheric Chemistry
Spring 2017	ATM 102, Weather and Climate. Enrollment: 180
Fall 2016	ATM 103, Extreme Weather (w K. Reed), Enrollment: 120
Spring 2016	ATM 102, Weather and Climate. Enrollment:
Fall 2015	ATM 103, Extreme Weather (with K. Reed). Enrollment: 30
Spring 2015	ATM 102, Weather and Climate. Enrollment: 97
Fall 2014	MAR 541, Foundations of Atmospheric Sciences I. Enrollment: 4
Fall 2012	ATM 102, Weather and Climate. Enrollment: 180
	MAR 594, Atmospheric Chemistry. Enrollment: 6
Spring 2012	MAR 549, Special Topics: Biosphere Atmosphere Interactions. Enrollment: 5
Fall 2011	ATM 102, Weather and Climate. Enrollment: 180
Spring 2011	MAR 529, Isotope Geochemistry (with K. Cochran)
Fall 2010	ATM 102, Weather and Climate. Enrollment: 180
Spring 2009	MAR 594, Atmospheric Chemistry. Enrollment: 8
Spring 2007	ATM 102, Weather and Climate. Enrollment: 180
	MAR 529, Isotope Geochemistry. Enrollment: 12
Fall 2006	ATM 102, Weather and Climate. Enrollment: 185
Spring 2006	ATM 102, Weather and Climate. Enrollment: 190
	MAR 550, Special Topics in Atmospheric Chemistry. Enrollment: 13
Fall 2005	ATM 102, Weather and Climate. Enrollment: 184
Spring 2005	ATM 397, Air Pollution and Control. Enrollment: 10
	MAR 591, Molecular Processes in the Atmosphere. Enrollment: 6
Fall 2004	ATM 102, Weather and Climate. Enrollment: 180
Spring 2004	MAR 529, Isotope Geochemistry (with K. Cochran). Enrollment: 10
	EST/ATM 102, Weather and Climate. Enrollment 185
Fall 2003	EST/ATM 102, Weather and Climate. Enrollment 180
Spring 2003	ATM 397, Air Pollution and Control. Enrollment: 28
Fall 2001	MAR 596, Atmospheric Chemistry. Enrollment: 14
Spring 2001	ATM 397, Air Pollution and Control (with S. Hameed). Enrollment: 24
	ATM 237, Current Issues in World Climate (with S. Hameed). Enrollment: 240
Spring 2000	ATM 397, Air Pollution and Its Control. Enrollment: 10
	OCN 650, Directed Study (A. Canas)
Fall 1999	MAR 567, Isotope Geochemistry (with K. Cochran). Enrollment: 11.
	ATM 205, Introduction to Atmospheric Sciences. Enrollment: 25.
Spring 1999	ATM 397, Air Pollution and Its Control. Enrollment: 30
Fall 1998	ATM 205, Introduction to Atmospheric Science. Enrollment: 19
Spring 1998	ATM 397, Air Pollution and Its Control. Enrollment: 30
Fall 1997	ATM 305, Global Climate Change (with M. Geller). Enrollment: 8

	MAR 573, Special Topics in Isotope Geochemistry. Enrollment: 9
Spring 1997	ATM 397, Air Pollution and Its Control. Enrollment: 41
Fall 1996	ATM 345, Theoretical Meteorology. Enrollment: 11
Spring 1996	ATM 397, Air Pollution and Its Control. Enrollment: 34
Fall 1995	ATM 205, Introduction to Atmospheric Sciences. Enrollment: 32
Spring 1995	ATM 397, Air Pollution and Its Control. Enrollment: 24

Awards

Sept 2000	La Poste Rouge (fellowship), Laboratoire de Glaciologie et Geophysique de l'Environnement du CNRS, Grenoble, France
May 1998	National Science Foundation CAREER Award Recipient
May 1992	Department of Energy Global Change Distinguished Postdoctoral Fellowship, Lawrence Livermore National Laboratory
March 1992	American Geophysical Union Outstanding Student Speaker 1991 AGU Fall Meeting, San Francisco.
December 1991	University of California Fee Scholarship Scripps Institution of Oceanography, UC San Diego
May 1989	National Center for Atmospheric Research Advanced Study Program Graduate Fellowship, Boulder, Colorado.

Professional Activities

Reviewer for: NSF-ATM, NSF-OCE, NSF-OPP, DOE, NASA, NOAA, EU: *Nature*, *Science*, *JGR-Atmospheres*, *Geophys. Res. Lett.*, *Tellus*, *Atmos. Chem. Phys.*, *Biogeosciences*, *Atmos. Meas. Tech.*, *Earth Planet. Sci. Lett., Proc. Natl. Acad. Sci.*

March-September 2023	Steering Committee Member, FARE Workshop, NSF, Boulder CO
June 2023-present	Editorial Board Member, Nature Scientific Reports
May 2022	Panelist, NSF Major Research Instrumentation (Geosciences Division)
March 2022-present	Member, Provost Committee on Promotion and Tenure, Stony Brook University
February-June 2022	Member, Search Committee for Endowed Chair, Department of Economics, Stony Brook University
Dec 2021-May 2022	Member, Search Committee for Senior Scientist, ACOM, National Center for Atmospheric Research
Jan 2022	Panelist, NOAA AC4 Program
April 2015	Panelist, NSF Environmental Sciences
Mar 2015	Panel Member (invited), ACCORD, NCAR
Feb 2012-2017	Member, NCAR Observing Facilities Assessment Panel (OFAP)
April 2012	Panelist, Office of Polar Programs, National Science Foundation
Feb 2012	Member, NCAR Atmospheric Chemistry Observing Facilities Workshop
Sept 2007-Sept 2010	Program Director, Atmospheric Chemistry, National Science Foundation
June 2007	Panel Member (invited), Global OH Workshop II, Mainz, Germany Visiting Scientist (invited), Laboratoire de Glaciologie et Geophysique de l'Environnement du CNRS, Grenoble, France
November 2005	Panel Member, Global OH Workshop, NOAA, Boulder, Co.
April 2004	Panel Member, Isotope Applications to Climate Studies Workshop, National Center for Atmospheric Research
Feb 2002-Dec 2002	Visiting Scientist (invited), Laboratoire de Glaciologie et Geophysique de l'Environnement du CNRS, Grenoble, France

June 2002-August 2002	Visiting Scientist (invited), Max Planck Institute for Nuclear Physics, Heidelberg, Germany
Sept 2000-Jan 2001	Visiting Scientist (invited), Laboratoire de Glaciologie et Geophysique de l'Environnement du CNRS, Grenoble, France
December 1999	Session Chair, American Geophysical Union 1999 Fall Meeting.
July -August 1999	Visiting Scientist (invited), Max Planck Institute for Chemistry, Atmospheric Chemistry Division, Mainz, Germany.
April 1999	Event Judge, Shipley Ronal Invitational Science Fair, The Wheatley School.
January 1999	Visiting Scientist (invited), National Institute for Water and Atmospheres, Crown Research Institute, Wellington, New Zealand.
December 1998	Session Chair, American Geophysical Union 1998 Fall Meeting.

University Committees/Other

Sept 2010-2012	Graduate Programs Committee, SOMAS
January-May 2006	Chair, ITPA Faculty Search Committee
December 2003-2006	Graduate Programs Committee
September 03-2006	Organizer, SOMAS Colloquium
January 2000-2002	SOMAS Undergraduate Programs Committee
Sept 1998-Sept 00	Chair, University Senate Campus Environment Committee
Sept 1998-May 1999	University Senate Undergraduate Admissions Committee
Sept 1997-1999	SOMAS Awards Committee
Sept 1996-1998	SOMAS Graduate Programs Committee
Sept 1996-May 1997	Seminar Organizer (TAOS Seminar series)

Publications (peer reviewed) (*= students/postdoc)

Wei, D*, C.Cao*, A. Karambelas, **J.E. Mak**, A. Reinmann, R. Commane, High-resolution modeling of summertime biogenic isoprene emissions in New York City, *Environ. Sci. Technol., in review.*

Coggon, M., et al., inc. **J.E. Mak**, J. Marcantonio* and C. Cao*, Identifying and correcting interferences to PTR-ToF-MS measurements of isoprene and other urban volatile organic compounds, *Atmos. Meas. Tech.*, 17, 801–825, 2024.

Henkes, G., P. Place*, **J.E. Mak**, Large, Negative Clumped Isotope Values Observed in Atmospheric Carbon Monoxide, *AGU Advances*, in press 2024.

van Herpen, M. M. J. W.; Li, Q.; Saiz-Lopez, A.; Röckmann, T.; Cuevas, C. A.; Fernandez, R. P.; **Mak, J.E.**; Mahowald, N. M.; Johnson, M. S., Photocatalytic Production of Chlorine by Mineral Dust-Sea Spray Aerosols, *Proc. Natl. Acad. Sci.*, 2023-03974R, 2023.

Cao, C*, D. Gentner, R. Commane, R. Toledo-Crowe, **J.E. Mak**, Policy-related gains in urban air quality may be offset by increased emissions in a warming climate, *Environ. Sci. Technol.*, 57, 26, 9683–9692, 2023.

Khare, P. et al., inc. **J.E. Mak** and C. Cao*, Ammonium-adduct chemical ionization to investigateanthropogenic oxygenated gas-phase organic compounds in urban air, *Atmos. Chem. Phys.*, acp-2022-421, 2022.

Kim, S., et al., inc **J.E. Mak** and L. Su*, The roles of suburban forest in controlling vertical trace gas and OH reactivity distributions – a case study for Seoul Metropolitan Area, *Faraday Disc.*, 226, 537, 2021.

Zhang, J., **J.E. Mak** Z. Wei, M. Niineman, J. Marto, J. Schwab, Long Island Enhanced Aerosol Event during LISTOS 2018: Association with heat wave and marine influences, *Env. Poll.,* 270, 116299-116303, 2021 doi.org/10.1016/j.envpol.2020.116299.

Sanchez et al., inc **J.E. Mak**, Contributions to OH reactivity from unexplored volatile organic compounds measured by PTR-ToF-MS – A case study in a suburban forest of the Seoul Metropolitan Area during KORUS-AQ 2016, *Atmos. Chem. Phys.*, doi.org/10.5194/acp-2020-174, 2020.

Carlton, A.M., inc **J.E. Mak**, The Southeast Atmosphere Studies (SAS): coordinated investigation and discovery to answer critical questions about fundamental atmospheric processes. *Bull. Am. Met. Soc.*, 99(3): 547-567, doi:10.1175/BAMS-D-16-0048.1, 2018.

B. Colle, M. Sienkowicz, C. Archer, D. Veron, F. Veron, W. Kimpton, and **J.E. Mak**, Meteorological Observations for U.S. East Coast Offshore Wind Power: Improving the Mapping and Prediction of Offshore Wind Resources (IMPOWR), *Bull. Am. Met. Soc.*, 97, 8, 1377-1390, 2016.

L. Su*, E.G. Patton, J. Vilà-Guerau de Arellano, A.B. Guenther, L. Kaser, B. Yuan, F. Xiong, P.B. Shepson, L. Zhang, D.O. Miller, W.H. Brune, K. Baumann, E. Edgerton, A. Weinheimer, P.K. Misztal, J.-H. Park, A.H. Goldstein, K.M. Skog, F.N. Keutsch and **J.E. Mak,** Understanding isoprene photo-oxidation using observations and modeling over a subtropical forest in the Southeast US, *Atmos. Chem. Phys.*, 16, 7725-7741, doi:10.5194/acp-16-7725-2016, 2016.

K. Park*, Z. Wang, L. K. Emmons, **J. E. Mak**, Variation of atmospheric CO, $\delta^{13}C$ and $\delta^{18}O$ at high northern latitude during 2004-2009: observations and model simulations, *J. Geophys.Res.-Atmos.*, 120, 11,024–11,036, doi:10.1002/2015JD023191, 2015.

P.K. Misztal et al., inc. **J.E. Mak**, Atmospheric benzenoid emissions from plants rival those from fossil fuel, *Nature Sci. Rep., 5*, 12064, 2015.

K. Park*, L. K. Emmons, Z. Wang and **J. E. Mak**, Joint Application of Concentration and $\delta^{18}O$ to Investigate the Global Atmospheric CO Budget, *Atmosphere*, *6*, 547-578; doi:10.3390/atmos6050547, 2015.

R. Thalman et al., inc **J.E. Mak**, Instrument inter-comparison of glyoxal, methyl glyoxal and NO_2 under simulated atmospheric conditions, *Atmos. Meas. Tech.*, 8, 1835-1862, 2015.

Publications (peer reviewed) (= students) (cont.)*

J.E. Mak, L. Su*, A. Guenther, T. Karl, A Novel Whole Air Sample Profiler (WASP) for Collecting Vertical Profiles of Selected Volatile Organic Compounds above a Forest Canopy, *Atmos. Meas. Tech.*, 6, 4153-4182, 2013.

J. Peñuelas et al., inc **J.E. Mak**, Intensive measurements of gas, water, and energy exchange between vegetation and troposphere during the MONTES campaign in a vegetation gradient from short semi-desertic shrublands to tall wet temperate forests in the NW Mediterranean Basin, *Atmos. Env.*, 75, 348-364, 2013.

K.H. Park*, L. Emmons, **J.E. Mak**, Large Interannual Variations in Biogenic Volatile Organic Compound Emissions based on Measurements of Carbon Monoxide, *Geophys. Res. Lett.*, 40, 1, 221-226, 2013.

V. Petrenko et al., inc. Z. Wang* and **J.E. Mak**, A 60 Year Record of Atmospheric Carbon Monoxide Reconstructed from Greenland Firn Air, *Atmos. Chem. Phys. Disc.*, 12, 18993-19037, 2012.

Z. Wang*, J. Chappellaz, P. Martinerie, K. Park, V. Petrenko, T. Blunier, C. Brenninkmeijer, **J. E. Mak**, The isotopic record of Northern Hemisphere atmospheric carbon monoxide since 1950; Implications for the CO budget, *Atmos. Chem. Phys.*, 12, 4365-4377, 2012.

P. Oikawa*, M. Giebel, L. Sternberg, L. Li, M. Timko, P. Swart, D. Riemer, **J.E. Mak**, M.T. Lerdau, Leaf and root pectin methylesterase activity and $^{13}C/^{12}C$ stable isotopic ratio measurements of methanol emissions give insight into methanol production in *Lycopersicon esculentum*, *New Phytologist*, 191, 4, 1031-1040, 2011.

P. Oikawa*, L. Li, **J.E. Mak**, M. Timko, M.T. Lerdau, Indirect effects of light on MeOH emissions in Lycopersicon esculentum, *Biogeosciences*, 8, 4, 1023-1030, 2011.

Z. Wang*, J. Chappellaz, K.H. Park*, and **J.E. Mak**, Large Variations in Southern Hemisphere Biomass Burning During the Last 650 Years, *Science*, 30, 1663-1666, 2010.

Z. Wang* and **J.E. Mak**, A new CF-IRMS system for the quantification of the stable isotopes of carbon monoxide from ice cores and small air samples, *Atmos. Meas. Tech.,* 3, 1307-1317, 2010.

K. Jardine*, T. Karl, M. Lerdau, P. Harley, A. Guenther, **J.E. Mak**, Carbon isotope analysis of acetaldehyde emitted from leaves following mechanical stress and anoxia, *Plant Biology*, 11, 4, 591-597, 2009.

K. Jardine*, P. Harley, T. Karl, A. Guenther, M. Lerdau, **J.E. Mak**, Plant physiological and environmental controls over the exchange of acetaldehyde between forest canopies and the atmosphere, *Biogeosciences*, 5, 1559-1572, 2008.

M.C. Krol, J-F Meirink, P Bergamaschi, **J.E. Mak**, D. Lowe, P. Jöckel, S. Houweling, What do ^{14}CO measurements tell us?, *Atmos. Chem. Phys.,* 8, 16, 5033-5044, 2008.

J. Lelieveld, C.A.M. Brenninkmeijer, P. Joeckel, I. Isaaksen, M. Krohl, **J.E. Mak**, E. Dlugokencky, S.A. Montzka, P.C. Novelli, P.P. Tans, New Directions: Watching over tropospheric hydroxyl, *Atmos. Env.*, 40, 5741-5746, 2006.

J. Funk*, **J.E. Mak**, M.T. Lerdau, Stress-induced changes in carbon sources for isoprene production in *Populus deltoids*, *Plant, Cell and Environment,* 27, 6, 747-755, 2004.

N. Landman, J. K. Cochran, **J.E. Mak**, R. Cerrato, Habitat and age of the giant squid (*Architeuthis sanctipauli*) inferred from isotopic analyses, *Mar. Bio.*, 144, 685-691, 2004.

T.S. Rhee, **J.E. Mak**, T. Rockmann, C.A.M. Brenninkmeijer, Continuous-flow isotope analysis of the D/H ratio in atmospheric H_2, *Rap. Comm. Mass. Spect.*, 18, 299-306, 2003.

J.E. Mak, T. Sandomenico*, P. Bergamaschi, Stable isotopic composition of carbon monoxide at a remote tropical Atlantic site, *J. Geophys. Res.*, 108, D20, 4635-4642, 2003.

Z. Zhu*, R.C. Aller, **J.E. Mak**, Stable carbon isotope cycling in mobile coastal muds of Amapa, Brazil, *Cont. Shelf Res.*, 22, 2065-2079, 2002.

Publications (peer reviewed) (*= students) (cont.)

J.E. Mak, M.R. Manning, D.C. Lowe, Aircraft observations of $\delta^{13}C$ of atmospheric methane over the Pacific in August 1991 and 1993: Evidence of an enrichment in $^{13}CH_4$ in the Southern Hemisphere, *J. Geophys. Res.*, 105, D1, 1329-1335, 2000.

J.E. Mak, J.R. Southon, and C.A.M. Brenninkmeijer, Direct measurement of ^{14}C production rates at Earth's surface, *Geophys. Res. Lett.*, 26, 22, 3381-3384, 1999.

J.E. Mak and G. Kra*, The isotopic composition of carbon monoxide at Montauk Point, Long Island, *Chemosphere-Global Change Science*, 1, 205-218, 1999.

J.E. Mak and W. Yang, A technique for analysis of air samples for ^{13}C and ^{18}O in carbon monoxide via continuous flow isotope ratio mass spectrometry, *J. Anal. Chem.*, 70, 5159-5161, 1998.

J.E. Mak and J.R. Southon, Assessment of tropical OH seasonality using atmospheric ^{14}CO measurements from Barbados, *Geophys. Res. Lett.*, 25, 15, 2801-2804, 1998.

J.E. Mak and C.A.M. Brenninkmeijer, Measurement of ^{13}CO and $C^{18}O$ in the Free Troposphere, *J. Geophys. Res.*, 103, D15, 19347-19358, 1998.

J.E. Mak, C.A.M. Brenninkmeijer, J. Tamaresis, Atmospheric ^{14}CO Observations and their use for Estimating Carbon Monoxide Removal Rates, *J. Geophys. Res.*, 99, 22915, 1994.

J.E. Mak and C.A.M. Brenninkmeijer, Compressed Air Sample Technology for the Isotopic Analysis of Atmospheric Carbon Monoxide, *J. Atmos. Ocean. Tech.*, 11, 2, 425-431, 1994.

J.E. Mak, C.A.M. Brenninkmeijer, M.R. Manning, Evidence for a Missing Carbon Monoxide Sink Based on Tropospheric Measurements of ^{14}CO, *Geophys. Res. Lett.*, 19, 14, 1467-1470, 1992.

Number of published abstracts/presentations at professional meetings: >120