

Xun Jiang

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EDUCATION

2001-2006 **Dept. of Environmental Science & Engineering**

California Institute of Technology

Ph. D. in Environmental Science & Engineering

1998-2001 **Dept. of Geophysics**

Peking University, Beijing

M.S. in Meteorology (Focus on Atmospheric Dynamics)

1994-1998 **Dept. of Atmospheric Sciences**

Nanjing University of Information Science and Technology

B.S. with honors in Atmospheric Science

PROFESSIONAL EXPERIENCE

- Postdoctoral Scholar, Jet Propulsion Laboratory, California Institute of Technology (09/2006-08/2008)
- Assistant Professor, Department of Earth & Atmospheric Sciences, University of Houston (09/2008-08/2013)
- Associate Professor, Department of Earth & Atmospheric Sciences, University of Houston (09/2013-Current)
- NASA Atmospheric Infrared Sounder Science Team Member (2006-Present)
- NASA Orbital Carbon Observatory 2 (OCO2) Science Team Associate (2011-Present)
- Editor for Scientific Reports: Nature Publishing Group (2014-Present)
- American Meteorological Society Member
- American Geophysical Union Member

RESEARCH EXPERIENCE

- Associate Professor, Department of Earth & Atmospheric Sciences, University of Houston (2013-Current)
- Assistant Professor, Department of Earth & Atmospheric Sciences, University of Houston (2008-2013)
- Postdoctoral Scholar to Dr. Moustafa Chahine, JPL, California Institute of Technology (2006-2008)
- Graduate Research Assistant to Prof. Yuk L. Yung, California Institute of Technology (2001-2006)

TEACHING EXPERIENCE

- Teaching Assistant for GE 152: Atmospheric Radiation, Caltech 2004, 2005
- Teaching Assistant for GE 173: Topics in Atmosphere and Ocean Dynamics, Caltech 2005

- Instructor for GEOL 6396: Atmospheric Science Seminar, UH 2008, 2009, 2012, 2014, 2016
- Instructor for GEOL 3380: Physical Meteorology, UH 2009, 2011, 2014, 2018
- Instructor for GEOL 6328: Atmospheric Data Analysis & Statistics, UH 2009, 2013, 2015, 2016
- Instructor for GEOL 1350: Introduction to Meteorology, UH 2010-2018
- Instructor for GEOL 6397: Atmospheric Radiation, UH 2010, 2015, 2017
- Instructor for GEOL 3378: Principle of Atmospheric Sciences, UH 2010-2017

PROFESSIONAL REVIEWS

Journal of Geophysical Research-Atmospheres

Geophysical Research Letters

Journal of Climate

Nature-Geosciences

Nature-Communications

Nature-Scientific Reports

Advances in Space Research

Atmospheric Chemistry and Physics

Global Biogeochemical Cycles

Journal of the Atmospheric Sciences

ACADEMIC AWARDS AND HONORS

- NASA Group Achievement Award to AIRS Science Team, 2007
- Li Ming Fellowship in California Institute of Technology, 2004
- Academic Excellence Fellowship in Peking University, 2000
- Guang Cai Fellowship in Peking University, 2000
- Academic Excellence Fellowship in Nanjing University of Information Science and Technology, 1998
- Excellent Student Leader Honor & First Prize Scholarship in Nanjing University of Information Science and Technology, 1997
- Academic Excellence Fellowship in Nanjing University of Information Science and Technology, 1996
- Excellent Student Leader Honor & Scholarship in Nanjing University of Information Science and Technology, 1995

RESEARCH PROJECTS

1. Project Title: Global Change and Air Pollution: Phase 2 Implications.
PI: **Xun Jiang**
Program contact: Daniel Jacob, Email: djacob@fas.harvard.edu, Phone: 617-495-1794
Sponsoring Agency: Harvard University, Environmental Protection Agency (EPA) STAR Program
Period: 04/2009-04/2011
2. Project Title: Comparison Between Atmospheric Chemistry Model and Observations for the Second Texas Air Quality Study Period.
PI: **Xun Jiang**; Co-I: Barry Lefer
Program contact: Doreen Neil, Email: Doreen.O.Neil@nasa.gov, Phone: 757-864-8171
Sponsoring Agency: NASA – Stennis Space Center
Period: 05/2009-12/2011
3. Project Title: Improving the characterization of pollution transported into Texas.
PI: **Xun Jiang**; Co-I: Daniel Jacob, Gregory Osterman, Barry Lefer
Program contact: Jim Smith, Email: Jim.Smith@tceq.texas.gov

Sponsoring Agency: Texas Commission on Environmental Quality
Period: 05/2010-12/2011

4. Project Title: Investigate Physical Processes in Global Climate Models Using Atmospheric Infrared Sounder.
PI: **Xun Jiang**
Program contact: Marvin Cruz, Email: marvin.r.cruz@jpl.nasa.gov
Sponsoring Agency: NASA JPL
Period: 10/2008-12/2013
5. Project Title: Enhancing the Speed and Quality of CO₂ Retrievals From the OCO-2 Mission.
Co-I: **Xun Jiang**; PI: Yuk Yung
Program contact: Kenneth Jucks, Email: Kenneth.w.jucks@nasa.gov
Sponsoring Agency: NASA ROSES 2011 (Science Team for the OCO-2 Mission)
Period: 09/2013-03/2017
6. Project Title: Investigation of Recycling Rate of Moisture in the Atmosphere From Observation and Model.
PI: **Xun Jiang**; Co-I: Yuk Yung
Program contact: Jared Entin, Email: Jared.K.Entin@nasa.gov
Sponsoring Agency: NASA ROSES (NASA Energy and Water Cycle Study)
Period: 12/2012-11/2016
7. Project Title: Generating and Archiving Cassini ISS Long-term Multi-filter Global Maps for Jupiter and Saturn.
Co-I: **Xun Jiang**; PI: Liming Li
Program contact: Sarah Noble, Email: sarah.noble-1@nasa.gov
Sponsoring Agency: NASA ROSES NNH15ZDA001N-PDART
Period: 10/2016-09/2019
8. Project Title: Saturn's Zonal Winds: Temporal and Vertical Variability Explored by Cassini Multi-Instrument Observations (Recently Funded Proposal)
Co-I: **Xun Jiang**; PI: Liming Li
Program contact: Jared Leisner, Email: HQ-CDAP@mail.nasa.gov
Sponsoring Agency: NASA ROSES NNH17ZDA001N-CDAP
Period: 10/2018-09/2021

PUBLICATIONS IN REFEREED JOURNALS

* indicate papers written by graduate students.

1. **Jiang, X.**, C.D. Camp, R. Shia, D. Noone, C. Walker, and Y.L. Yung, Quasi-biennial oscillation and quasi-biennial oscillation-annual beat in the tropical total column ozone: A two-dimensional model simulation, *Journal of Geophysical Research-Atmospheres*, 109 (D16), art. no. D16305, 2004.
2. Ruzmaikin, A., J. Feynman, **X. Jiang**, D.C. Noone, A.M. Waple, and Y.L. Yung, The pattern of northern hemisphere surface air temperature during prolonged periods of low solar output, *Geophysical Research Letters*, 31 (12), art. no. L12201, 2004.
3. Ruzmaikin, A., J. Feynman, **X. Jiang**, and Y.L. Yung, Extratropical signature of the quasi-biennial oscillation, *Journal of Geophysical Research-Atmospheres*, 110 (D11), art. no. D11111, 2005.

4. Natraj, V., **X. Jiang**, R.L. Shia, X.L. Huang, J.S. Margolis, and Y.L. Yung, Application of principal component analysis to high spectral resolution radiative transfer: A case study of the O-2 A band, *Journal of Quantitative Spectroscopy & Radiative Transfer*, 95 (4), 539-556, 2005.
5. **Jiang, X.**, D. B. A. Jones, R. Shia, D. E. Waliser, and Y. L. Yung, Spatial patterns and mechanisms of the Quasi-Biennial Oscillation-Annual Beat of ozone, *Journal of Geophysical Research*, 110, D23308, 2005.
6. **Jiang, X.**, W. Ku, R. Shia, Q. Li, J. W. Elkins, R. G. Prinn, and Y. L. Yung, Seasonal Cycle of N₂O: Analysis of Data, *Global Biogeochemical Cycles*, 21, doi: 10.1029/2006GB002691, 2007.
7. **Jiang, X.**, S. J. Eichelberger, D. L. Hartmann, R. Shia, and Y. L. Yung, Influence of doubled CO₂ on ozone via changes in the Brewer-Dobson circulation, *Journal of the Atmospheric Sciences*, 64, 2751-2755, 2007.
8. Li, L., A. P. Ingersoll, **X. Jiang**, D. Feldman, and Y. L. Yung, Lorenz energy cycle of the global atmosphere based on reanalysis datasets, *Geophysical Research Letters*, 34, doi:10.1029/2007GL029985, 2007.
9. Chahine, M. T., L. Chen, P. Dimotakis, **X. Jiang**, Q. Li, E. T. Olsen, T. S. Pagano, J. Randerson, and Y. Yung, Satellite remote sounding of mid-tropospheric CO₂, *Geophysical Research Letters*, 35, doi:10.1029/2008GL035022, 2008.
10. **Jiang, X.**, S. Pawson, C. D. Camp, J. E. Nielsen, R. Shia, T. Liao, V. Limpasuvan, and Y. L. Yung, Interannual variability and trends of extratropical ozone. Part I: Northern hemisphere, *Journal of the Atmospheric Sciences*, 65, 3013-3029, 2008.
11. **Jiang, X.**, S. Pawson, C. D. Camp, J. E. Nielsen, R. Shia, T. Liao, V. Limpasuvan, and Y. L. Yung, Interannual variability and trends of extratropical ozone. Part II: Southern hemisphere, *Journal of the Atmospheric Sciences*, 65, 3030-3041, 2008.
12. **Jiang, X.**, Q. Li, M. Liang, R. Shia, M. T. Chahine, E. T. Olsen, L. L. Chen, and Y. L. Yung, Simulation of Upper Troposphere CO₂ from chemistry and transport models, *Global Biogeochemical Cycles*, 22, doi:10.1029/2007GB003049, 2008.
13. Yung, Y. L., M. C. Liang, **X. Jiang**, R. Shia, C. Lee, B. Bezard, and E. Marcq, Evidence for carbonyl sulfide (OCS) conversion to CO in the lower atmosphere of Venus, *Journal of Geophysical Research*, 114, doi:10.1029/2008JE003094, 2009.
14. Kuai, L., R. Shia, **X. Jiang**, K. Tung, and Y. Yung, Non-stationary synchronization of equatorial QBO with SAO in observations and a model, *Journal of the Atmospheric Sciences*, 1654-1664, 2009.
15. Kuai, L., R. Shia, **X. Jiang**, K. Tung, and Y. Yung, Modulation of the period of the Quasi-Biennial Oscillation by the solar cycle, *Journal of the Atmospheric Sciences*, 2418-2428, 2009.
16. **Jiang, X.**, M. T. Chahine, E. T. Olsen, L. L. Chen, and Y. L. Yung, Interannual Variability of Mid-tropospheric CO₂ from Atmospheric Infrared Sounder, *Geophysical Research Letters*, 37, doi: 10.1029/2010GL042823, 2010. (It was listed as Select Scientific Publications on NASA AIRS website http://airs.jpl.nasa.gov/documents/select_publications/.)

17. Wang*, J., S. Pawson, B. J. Tian, M. Liang, R. Shia, Y. L. Yung, and **X. Jiang**, El Niño-Southern Oscillation in tropical and mid-latitude column ozone, *Journal of the Atmospheric Sciences*, 1911-1921, 2011.
18. Li, L., **X. Jiang**, M. T. Chahine, E. T. Olsen, E. Fetzer, L. Chen, and Y. L. Yung, The recycling rate of atmospheric moisture over the past two decades (1988-2009), *Environmental Research Letters*, doi:10.1088/1748-9326/6/3/034017, 2011. (It was highlighted by the editor of Environmental Research Letters. Please refer to “Insight: how has the recycling rate of atmospheric moisture changed over the past 20 years? (<http://environmentalresearchweb.org/cws/article/news/47247>)”.)
19. Li, L., **X. Jiang**, M. T. Chahine, J. Wang*, and Y. L. Yung, The mechanical energies of the global atmosphere in El Niño and La Niña years, *Journal of the Atmospheric Sciences*, 68, 3072-3078, 2011.
20. Wang*, J., **X. Jiang**, M. T. Chahine, M. C. Liang, E. T. Olsen, L. L. Chen, S. Licata, T. Pagano, and Y. L. Yung, The influence of Tropospheric Biennial Oscillation on mid-tropospheric CO₂, *Geophysical Research Letters*, doi:10.1029/2011GL049288, 2011.
21. Li, L., **X. Jiang**, A. Ingersoll, A. Del Genio, C. Porco, R. West, A. Vasavada, S. Ewald, B. Conrath, P. Gierasch, A. Simon-Miller, C. Nixon, R. Achterberg, G. Orton, L. Fletcher, and K. Baines, Equatorial winds on Saturn and the stratospheric oscillation, *Nature-Geosciences*, doi:10.1038/NGEO1292, 2011. (It was reported by the UH News entitled “Observations from the Cassini Spacecraft Provide Details of Saturn’s Winds” at http://www.nsm.uh.edu/news-events/stories/2011/1104_liJiang.php.)
22. Li, L., C. A. Nixon, R. K. Achterberg, M. A. Smith, N. J. Goriunov, **X. Jiang**, B. J. Conrath, P. J. Gierasch, A. A. Simon-Miller, F. M. Flasar, K. B. Baines, A. P. Ingersoll, R. A. West, A. Vasavada, and S. Ewald, The Global Energy Balance of Titan, *Geophysical Research Letters*, doi:10.1029/2011GL050053, 2011. (It was selected as the cover page for the Geophysical Research Letters and highlighted by the editor. Please refer to “Evaluating the Global Energy Balance of Titan” at <http://www.agu.org/cgi-bin/highlights/highlights.cgi?action=show&doi=10.1029/2011GL050053&jc=gl>.)
23. Pagano, T. S., E. T. Olsen, M. T. Chahine, A. Ruzmaikin, H. Nguyen, and **X. Jiang**, Monthly Representations of Mid-tropospheric Carbon Dioxide from the Atmospheric Infrared Sounder, *Proc. of SPIE*, 8158, doi:10.1117/12.894960, 2011.
24. **Jiang, X.**, M. T. Chahine, Q. Li, M. Liang, E. T. Olsen, L. Chen, J. Wang*, and Y. L. Yung, CO₂ semi-annual oscillation in the middle troposphere and at the surface, *Global Biogeochemical Cycles*, 26, doi:10.1029/2011GB004118, 2012.
25. Lee*, D., J. Wang*, **X. Jiang**, Y. Lee, and K. Jang, Comparison between atmospheric chemistry model and observations utilizing the RAQMS-CMAQ linkage, *Atmospheric Environment*, 61, 85-93, 2012.
26. **Jiang, X.**, J. Wang*, E. T. Olsen, M. Liang, T. S. Pagano, L. Chen, S. J. Licata, and Y. L. Yung, Influence of El Niño on mid-tropospheric CO₂ from Atmospheric Infrared Sounder and Model, *Journal of the Atmospheric Sciences*, 223-230, 2013.
27. Li, L., R. K. Achterberg, B. J. Conrath, P. J. Gierasch, M. A. Smith, A. A. Simon-Miller, C. A. Nixon, G. S. Orton, F. M. Flasar, **X. Jiang**, K. H. Baines, R. Morales-Juberias, A. P. Ingersoll, A. R. Vasavada, A. D. Del Genio, R. A. West, and S. P. Ewald, Strong temporal variation over one Saturnian year: From Voyager to Cassini, *Scientific Reports*, doi:10.1038/srep02410, 2013.

28. **Jiang, X.**, J. Wang*, E. T. Olsen, T. Pagano, L. L. Chen, and Y. Yung, Influence of Stratospheric Sudden Warming on AIRS mid-tropospheric CO₂, *Journal of the Atmospheric Sciences*, 2566-2573, 2013.
29. Trammell*, H. J., L. Li, **X. Jiang**, M. Smith, S. Horst, and A. Vasavada, The global vortex analysis of Jupiter and Saturn based on Cassini Imaging Science Subsystem, *Icarus*, doi:10.1016/j.icarus.2014.07.019, 2014.
30. Pagano, T. S., E. T. Olsen, H. Nguyen, A. Ruzmaikin, **X. Jiang**, and L. Perkins, Global variability of midtropospheric carbon dioxide as measured by the Atmospheric Infrared Sounder, *Journal of Applied Remote Sensing*, 8, doi:10.1117/1.JRS.8.084984, 2014.
31. Li, L., **X. Jiang**, H. J. Trammell, Y. Pan*, J. Hernandez, B. J. Conrath, P. J. Gierasch, R. K. Achterberg, C. A. Nixon, F. M. Flasar, S. Perez-Hoyos, R. A. West, K. H. Baines, and B. Knowles, Saturn's giant storm and global radiant energy, *Geophysical Research Letters*, 42, 2144-2148, 2015.
32. **Jiang, X.**, E. T. Olsen, T. S. Pagano, H. Su, and Y. L. Yung, Modulation of mid-tropospheric CO₂ by the South Atlantic Circulation, *Journal of the Atmospheric Sciences*, doi:10.1175/JAS-D-14-0340.1, 2015.
33. Trammell*, J. H., **X. Jiang**, L. Li, M. Liang, M. Li, J. Zhou, E. Fetzer, and Y. L. Yung, Investigation of Precipitation Variations over Wet and Dry Areas from Observation and Model, *Advances in Meteorology*, Art. No. 981092, 2015.
34. **Jiang, X.**, D. Crisp, E. T. Olsen, S. Kulawik, C. E. Miller, T. S. Pagano, M. Liang, and Y. L. Yung, CO₂ annual and semi-annual cycles from multiple satellite retrievals and models, *Earth and Space Science*, doi:10.1002/2014EA000045, 2016. (It was listed as Selected Scientific Publications on NASA OCO-2 website.)
35. Trammell*, J. H., **X. Jiang**, L. Li, A. Kao*, G. J. Zhang, E. Chang, and Y. L. Yung, Temporal and spatial variability of precipitation from observation and model, *Journal of Climate*, 29, 2543-2555, 2016.
36. Souri, A. H., Y. Choi, X. Li, A. Kotsakis, and **X. Jiang**, A 15-year climatology of wind pattern impacts on surface ozone in Houston, Texas, *Atmospheric Research*, 174, 124-134, 2016.
37. Newman, S., X. Xu, K. R. Gurney, Y. K. Hsu, K. F. Li, **X. Jiang**, R. Keeling, S. Feng, D. O'Keefe, R. Patarasuk, K. W. Wong, P. Rao, M. L. Fischer, and Y. L. Yung, Toward consistency between trends in bottom-up CO₂ emissions and top-down atmospheric measurements in the Los Angeles megacity, *Atmospheric Chemistry and Physics*, 16, 3843-3863, doi:10.5194/acp-16-3843-2016, 2016.
38. Trammell*, H. J., L. Li, **X. Jiang**, Y. Pan*, M. A. Smith, E. A. Bering III, S. M. Horst, A. R. Vasavada, A. P. Ingersoll, M. A. Janssen, R. A. West, C. Porco, A. A. Simon, and K. H. Baines, Vortices in Saturn's northern hemisphere (2008-2015) observed by Cassini ISS, *Journal of Geophysical Research*, 121, 1814-1826, 2016.
39. Pan*, Y., L. Li, **X. Jiang**, G. Li, W. Zhang, X. Wang, and A. P. Ingersoll, Earth's changing global atmospheric energy cycle in response to climate change, *Nature Communications*, doi:10.1038/ncomms14367, 2017. (It was reported by ScienceDaily, Science Magazine, Environmental News Network, and NASA Astrobiology Magazine.)

40. **Jiang, X.**, A. Kao*, A. Corbett*, E. Olsen, T. Pagano, A. Zhai, S. Newman, L. Li, and Y. L. Yung, Influence of droughts on mid-tropospheric CO₂, *Remote Sensing*, doi:10.3390/rs9080852, 2017. (It was listed as Selected Scientific Publications on NASA AIRS website.)
41. Corbett*, A., **X. Jiang**, X. Xiong, A. Kao*, and L. Li, Modulation of mid-tropospheric methane by El Nino, *Earth & Space Science*, 4, doi:10.1002/2017EA000281, 2017.
42. Kao*, A., **X. Jiang**, L. Li, H. Su, and Y. Yung, Precipitation, circulation, and cloud variability over the past two decades, *Earth & Space Science*, 4, doi:10.1002/2017EA000319, 2017.
43. Kao*, A., **X. Jiang**, L. Li, J. H. Trammell*, G. J. Zhang, H. Su, J. H. Jiang, and Y. Yung, A comparative study of atmospheric moisture recycling rate between observations and models, *Journal of Climate*, doi: 10.1175/JCLI-D-17-0421.1, 2018.
44. Li, L., **X. Jiang**, R. A. West, P. J. Gierasch, S. Perez-Hoyos, A. Sanchez-Lavega, L. N. Fletcher, J. J. Fortney, B. Knowles, C. Porco, K. H. Baines, P. M. Fry, A. Mallama, R. K. Achterberg, A. A. Simon, C. A. Nixon, G. S. Orton, U. A. Dyudina, S. P. Ewald, and R. W. Schmude Jr., Less absorbed solar energy and more internal heat for Jupiter, *Nature Communications*, doi:10.1038/s41467-018-06107-2, 2018.
45. Studwell*, A., L. Li, **X. Jiang**, K. H. Baines, P. M. Fry, T. W. Momary, and U. A. Dyudina, Saturn's global zonal winds explored by Cassini/VIMS 5-micron images, *Geophysical Research Letters*, 45, doi:10.1029/2018GL078139, 2018.
46. Laskar, A., L. Lin, **X. Jiang**, and M. Liang, Assessments of variability of CO₂ in Taipei, Taiwan and influences of long-range transport by data from ex situ multiple isotope analyses, OCO-2 satellite retrievals, and assimilated Carbon Tracker model products, *Earth & Space Science*, *In Press*, doi: 10.1029/2018EA000415, 2018.

Publications are listed at <http://support.geosc.uh.edu/~xjiang/xunrefs.html>.

CONFERENCE PRESENTATIONS

1. Farrara, J. D., **X. Jiang**, S. Leroy, J. Feynman, A. Ruzmaikin, and Y. L. Yung, 2001, Effects of a reduced ozone layer on the lower stratosphere and the troposphere. *EOS Transactions American Geophysical Union*, Vol. 82, A11C-06, Dec 10-14, 2001.
2. **Jiang, X.**, R. Shia, C. D. Camp, Y. L. Yung and C. Shih, 2002, Long Term Trends in the Radiative Heating Rates and Planetary Wave Activity in the Winter Polar Stratosphere. *EOS Transactions American Geophysical Union*, Vol. 83, No. 45, A11B-0095, Dec 6-10, 2002.
3. Yung, Y. L., **X. Jiang**, A. Y. Lee, R. L. Shia and T. E. Dowling, 2003, Stratosphere and Troposphere Exchange using Chemical Tracers: A Comparative Study between Earth and Jupiter. *EOS Transactions American Geophysical Union*, Vol. 84, No. 46, A12A-0071, p.113, Dec 8-12, 2003.
4. **Jiang, X.**, C. D. Camp, R. L. Shia, D. Noone, C. Walker, T. Schneider and Y. L. Yung, 2003, QBO and QBO-annual Beat Signals in the Tropical Total Column Ozone Simulated by a Two-dimensional Chemistry and Transport Model. *EOS Transactions American Geophysical Union*, Vol. 84, No. 46, A21D-1015, p.142, Dec 8-12, 2003.
5. Jiang, Y., **X. Jiang**, R. L. Shia, S. P. Sander and Y. L. Yung, 2003, Polarization Study of the O₂ A-Band and Its Application to the Retrieval of O₂ Column Abundance. *EOS Transactions American Geophysical Union*, Vol. 84, No. 46, A41E-0735, p.255, Dec 8-12, 2003.

6. Camp, C. D., J. Feynman, **X. Jiang**, R. L. Shia, C. Walker, T. Schneider, M. Allen and Y. L. Yung, 2003, Solar Cycle Variation in the Ozone Distribution Simulated by a Two-dimensional Chemistry Transport Model. *EOS Transactions American Geophysical Union*, Vol. 84, No. 46, SH52B-06, p.353, Dec 8-12, 2003.
7. **Jiang, X.**, C. D. Camp, R. L. Shia and Y. L. Yung, 2004, Comparison of ECMWF assimilated Ozone Data with Measurements. *EOS Transactions American Geophysical Union*, Vol. 85, No. 46, A51C-0775, p.354, Dec 13-17, 2004.
8. Natraj, V., **X. Jiang**, R. L. Shia, X. Huang, J. S. Margolis, and Y. L. Yung, 2004, The application of principal component analysis in fast, highly accurate and high spectral resolution radiative transfer modeling: A case study of the O₂ A-band. *EOS Transactions American Geophysical Union*, Vol. 85, No. 46, SF43A-0777, p.321, Dec 13-17, 2004.
9. **Jiang, X.**, R. L. Shia, C. D. Camp, and Y. L. Yung, 2004, Interannual variability of the Brewer-Dobson circulation and total column ozone. *Global Circulation of the Atmosphere*, Nov 4-6, 2004.
10. **Jiang, X.**, C. D. Camp, R. Shia, T. Liao, K. Jeev, V. Limpasuvan, and Y. L. Yung, 2005, Interannual variability in high latitude stratospheric ozone. *EOS Transactions American Geophysical Union*, Vol. 86, No. 46, A13D-0975, p.135, Dec 5-9, 2005.
11. Shia, R., **X. Jiang**, D. B. Jones, D. E. Waliser, and Y. L. Yung, 2005, Spatial patterns and mechanisms of the Quasi-biennial Oscillation-Annual Beat of ozone. *EOS Transactions American Geophysical Union*, Vol. 86, No. 46, A13D-0977, p.135, Dec 5-9, 2005.
12. Yung, Y. L., W. Ku, **X. Jiang**, R. Shia, Q. Li, and J. W. Elkins, 2005, Analyzing the seasonal cycle of N₂O. *EOS Transactions American Geophysical Union*, Vol. 86, No. 46, A51B-0030, p.401, Dec 5-9, 2005.
13. **Jiang, X.**, R. Shia, Q. Li, M. T. Chahine, E. T. Olsen, L. L. Chen, and Y. L. Yung, 2006, Simulation of upper troposphere CO₂ from two-dimensional and three-dimensional models. *EOS Transactions American Geophysical Union*, Vol. 87, A31B-0881, Dec 11-15, 2006.
14. Li, L., A. P. Ingersoll, **X. Jiang**, and Y. L. Yung, 2006, Variations in the mechanical energy cycle of atmosphere. *EOS Transactions American Geophysical Union*, Vol. 87, A13D-0969, Dec 11-15, 2006.
15. Kuai, L., R. Shia, **X. Jiang**, K. Tung, and Y. L. Yung, 2006, Study of the nonlinear interaction between QBO and Solar Cycle in stratospheric ozone using THIN AIR model. *EOS Transactions American Geophysical Union*, Vol. 87, A21F-0890, Dec 11-15, 2006.
16. Li, Q., **X. Jiang**, M. Chahine, Y. L. Yung, E. Olsen, and L. Chen, 2006, Large-scale atmospheric variability in AIRS CO₂ and O₃. *EOS Transactions American Geophysical Union*, Vol. 87, A511-02, Dec 11-15, 2006.
17. Li, K., **X. Jiang**, R. Shia, K. K. Lee, T. J. Pongetti, S. P. Sander, and Y. L. Yung, 2006, Periodicities of solar activity from atmospheric hydroxyl radicals. *EOS Transactions American Geophysical Union*, Vol. 87, SA21A-0223, Dec 11-15, 2006.

18. Chahine, M. T., E. T. Olsen, L. L. Chen, Q. Li, and **X. Jiang**, 2006, Derivation of daily global distribution of mid-tropospheric CO₂ from AIRS spectra. *EOS Transactions American Geophysical Union*, Vol. 87, A511-01, Dec 11-15, 2006.
19. **Jiang, X.**, M. T. Chahine, Q. Li, E. T. Olsen, L. Chen, D. Liang, R. Shia, and Y. Yung, 2007, AIRS CO₂ in the upper troposphere, AIRS Science Team Meeting, Mar 27-30, 2007.
20. Yung, Y., M. Liang, **X. Jiang**, C. Lee, and B. Bezdard, Photochemistry and transport of CO and OCS in the middle atmosphere of Venus, *European Geosciences Union*, Vienna, Austria, Apr 15-20, 2007.
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GROUP INFORMATION

GRADUATE STUDENTS:

1. Jingqian Wang: PhD student (2008-2012)

PhD Thesis: Investigation of Tracer Gas Variability from Observations and Models.

Jingqian Wang received Outstanding Academic Achievements at the University of Houston in 2010 and 2011. She published six peer-reviewed papers, in which she is leading author for two papers. Jingqian Wang graduated in May 2012. Now she works as an air pollution specialist at California Air Resources Board.

2. Harold Justin Trammell: PhD student (2012-2014)

Harold Trammell wrote a proposal to NASA JPL and was admitted to the NASA JPL Planetary Science Summer School in 2012. He published five papers. He received Brown Foundation Outstanding Atmospheric Science Student Award, NASA Travel Award for Graduate Student, NSM Friends Graduate Fellowship, UHGAA and Sam Penn Scholarship for Outstanding Atmospheric Science Student. Now he works as a scientist on Europa Clipper Mission at Laboratory for Atmospheric and Space Physics, University of Colorado Boulder.

3. James Houston Trammell: PhD Student (2012-2015)

James Trammell was admitted to the Honor Society of Phi Kappa Phi in 2012. He received Outstanding Environmental Science Student Award in 2012-2013. He published four papers. Now he works as an Environmental Technical Specialist on weather and climate impact studies at Harris County Office of Homeland Security and Emergency Management.

4. Laura Judd: PhD Student (2013-2016)

Laura Judd received Outstanding Academic Achievement Award in 2014 and Brown Foundation Outstanding Atmospheric Science Student Award in 2015. She received 1st place on Research Day Graduate Student Oral Presentation in 2015. Laura published two papers and has two more papers in preparation. Laura received NASA Postdoctoral Fellowship in 2016. She works as a NASA Postdoctoral Scholar at NASA Langley Research Center.

5. Angela Kao: PhD Student (2013-2017)

Angela Kao was a selected finalist in the Student Poster Contest in 2014 Annual Conference of Science. She received Outstanding Academic Achievement Award in Atmospheric Science in 2015 and BP Scholarship in 2016. She published five papers. She works as an INSIGHT data science fellow.

6. Abigail Corbett: PhD Student (2015-2018)

Abigail received 1st place on Research Day Graduate Student Poster Presentation in 2016. She received Outstanding Academic Achievement Award in Atmospheric Science in 2017. Abigail published two papers and has three more papers in preparation. Abigail works as a Senior Atmospheric Scientist at Science Systems and Applications Inc. at NASA Langley Research Center in Hampton, VA.

7. Aaron Studwell: PhD Student (2016-present; PhD expected in 2020)

Aaron has published one paper and two more papers in preparation. He received Outstanding Academic Achievement Award in Atmospheric Science in 2018.

8. Jason La: MS Student (2016-2018)

Jason has submitted one paper and has one more paper in preparation.

9. Ellen Creecy: PhD Student (2018-present)

Ellen received Outstanding Student in Environmental Science Award in 2018. Ellen has submitted one paper.

UNDERGRADUATE STUDENTS:

1. James Houston Trammell (2011-2012)

James Trammell received the UH Provost's Undergraduate Research Scholarship in Spring 2012. James Trammell obtained BS degree in May 2012.

ALUMNI

1. Hyun-Cheol Kim (Previous Postdoctoral Fellow; Now at NOAA/ Air Resources Laboratory)

2. Jingqian Wang (Previous Postdoctoral Fellow; Now at California Air Resources Board)