

PROFESSIONAL REVIEWS

Advances in Space Research
Geophysical Research Letters
Global Biogeochemical Cycles
Journal of Climate
Journal of Geophysical Research-Atmospheres
Journal of the Atmospheric Sciences
Nature-Geosciences

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: 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; Time Period: 10/2008-12/2012
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; Time Period: 05/2009-12/2011
3. 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;
Time Period: 04/2009-04/2011
4. 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; Time Period: 05/2010-12/2011
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); Time Period: 11/2011-10/2014

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); Time Period: 02/2012-05/2014

PUBLICATIONS IN REFEREED JOURNALS

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, The 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, 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**, and Y. L. Yung, Variations in the mechanical energy cycle of the atmosphere, *Geophysical Research Letters*, 34, doi:10.1029/2007GL029985, 2007.

9. Chahine, M. T., L. Chen, P. E. Dimotakis, **X. Jiang**, Q. Li, E. T. Olsen, Y. L. Yung, T. S. Pagano, and J. Randerson, Satellite remote sounding of mid-tropospheric CO₂, *Geophysical Research Letters*, 35, doi:10.1029/2008GL035022, 2008.

10. **Jiang, X.**, S. Pawson, C. D. Camp, E. Nielsen, R. Shia, T. Liao, K. Jeev, V. Limpasuvan, and Y. L. Yung, Interannual variability and trends in extratropical ozone. Part I: Northern hemisphere, *Journal of the Atmospheric Sciences*, 65, 3013-3029, 2008.

11. **Jiang, X.**, S. Pawson, C. D. Camp, E. Nielsen, R. Shia, T. Liao, K. Jeev, V. Limpasuvan, and Y. L. Yung, Interannual variability and trends in 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 two-dimensional and three-dimensional models, *Global Biogeochemical Cycles*, 22, doi:10.1029/2007GB003049, 2008.
13. Yung, Y. L., M. C. Liang, **X. Jiang**, 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 observation and 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.
17. Wang, J., S. Pawson, B. J. Tian, Y. L. Yung, and **X. Jiang**, El Niño-Southern Oscillation in tropical and mid-latitude column ozone, *Journal of the Atmospheric Sciences*, doi:10.1175/JAS-D-11-045.1, 2011.
18. Li, L., **X. Jiang**, M. T. Chahine, E. T. Olsen, E. Fetzer, L. Chen, and Y. L. Yung, 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, K. Baines, High Altitude Equatorial Jet Changes on Saturn, *Nature-Geosciences*, doi:10.1038/NGEO1292, 2011.
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 Geophysical Research Letters and highlighted by the editor.)
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. **Jiang, X.**, J. Wang, E. T. Olsen, M. Liang, T. S. Pagano, L. Chen, S. J. Licata, and Y. L. Yung, Influence of El Nino on mid-tropospheric CO₂ from Atmospheric Infrared Sounder and Model, *Journal of the Atmospheric Sciences*, doi:10.1175/JAS-D-11-0282.1, *In Press*, 2012.
26. 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.

Publications listed in <http://geossun2.geosc.uh.edu/web/xjiang/xunrefs.html>.

CONFERENCE PRESENTATIONS

1. Ferrara, 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.
21. Chahine, M., **X. Jiang**, Q. Li, E. T. Olsen, L. Chen, Y. Yung, and J. Randerson, 2007, AIRS CO₂ in the upper troposphere, Fourth International Workshop on Greenhouse Gas Measurements from Space (IWGGMS), Paris, 2007.
22. Yung, Y., M. Liang, **X. Jiang**, C. Lee, B. Bezdard, and E. Marcq, 2007, Modeling the distribution of OCS in the lower atmosphere of Venus, American Astronomical Society, 39th DPS meeting, *Bulletin of the American Astronomical Society*, Vol. 39, p.503, 2007.

23. Li, Q., **X. Jiang**, M. T. Chahine, E. T. Olsen, L. Chen, and Y. L. Yung, 2007, Large-scale variability of middle and upper tropospheric CO₂, *EOS Transactions American Geophysical Union*, Vol. 88, A12B-03, Dec 10-14, 2007.
24. Kuai, L., R. Shia, **X. Jiang**, K. Tung, and Y. L. Yung, 2007, Influence of the solar cycle on the Quasi-Biennial Oscillation period, *EOS Transactions American Geophysical Union*, Vol. 88, GC31B-0341, Dec 10-14, 2007.
25. **Jiang, X.**, M. T. Chahine, Q. Li, E. T. Olsen, L. Chen, and Y. L. Yung, 2007, AIRS CO₂ in the upper troposphere. *EOS Transactions American Geophysical Union*, Vol. 88, A12B-04, Dec 10-14, 2007.
26. **Jiang, X.**, M. T. Chahine, E. T. Olsen, Q. Li, L. Chen, T. Pagano, and Y. L. Yung, 2008, A study of polar stratosphere-troposphere exchange using AIRS CO₂ and O₃, AIRS Science Team Meeting, Apr 15-17, 2008.
27. **Jiang, X.**, M. T. Chahine, E. T. Olsen, Q. Li, L. Chen, T. Pagano, and Y. L. Yung, 2008, Middle tropospheric CO₂ and O₃ by the Atmospheric Infrared Sounder, Fifth International Workshop on Greenhouse Gas Measurements from Space (IWGGMS), Pasadena, Jun 24-26, 2008.
28. Olsen, E. T., M. T. Chahine, L. Chen, **X. Jiang**, T. Pagano, and Y. L. Yung, 2008, Validation of AIRS retrievals of CO₂ via comparison to in situ measurements. *EOS Transactions American Geophysical Union*, Vol. 89, A32B-04, Dec 15-19, 2008.
29. Yung, Y., M. T. Chahine, L. Chen, **X. Jiang**, Q. Li, E. Olsen, T. Pagano, and J. T. Randerson, 2008, Satellite remote sounding of AIRS mid-tropospheric CO₂. *EOS Transactions American Geophysical Union*, Vol. 89, A32B-05, Dec 15-19, 2008.
30. **Jiang, X.**, M. T. Chahine, E. T. Olsen, L. Chen, and Y. L. Yung, 2008, Intraseasonal and interannual variability of AIRS CO₂. *EOS Transactions American Geophysical Union*, Vol. 89, A32B-06, Dec 15-19, 2008.
31. Ting, C., M. Liang, **X. Jiang**, and Y. L. Yung, 2008, CO₂ in the middle troposphere. *EOS Transactions American Geophysical Union*, Vol. 89, A41D-0124, Dec 15-19, 2008.
32. Li, Q., **X. Jiang**, M. Chahine, E. Olsen, L. Chen, Y. Yung, J. Randerson, 2008, Global distribution and transport of middle/upper tropospheric CO₂ observed from AIRS, 37th COSPAR scientific Assembly, in Montreal, Canada, July 13-20, 2008.
33. Chahine, M. T., E. T. Olsen, L. Chen, **X. Jiang**, T. Pagano, and Y. L. Yung, 2009, Validation of AIRS retrievals of CO₂ and comparison to chemistry and transport models. 89th AMS Annual Meeting, Phoenix, Jan 11-15, 2009.
34. Yung, Y. L., R. Shia, **X. Jiang**, M. Liang, K. Li, L. Kuai, C. E. Miller, M. Chahine, E. T. Olsen, and L. Chen, 2009, Global distribution of CO₂ in mid-troposphere from the Atmospheric Infrared Sounder measurements reveal cross equator exchange. NOAA Meeting, May, 2009.
35. **Jiang X.**, M. Chahine, E. Olsen, L. Chen, and Y. L. Yung, 2009, Seasonal and interannual variability of AIRS CO₂. Pasadena, AIRS Science Team Meeting, May 4-6, 2009.

36. Wang, J., **X. Jiang**, R. Shia, and Y. L. Yung, 2009, A 3.5-year signal in high latitude column ozone. *EOS Transactions American Geophysical Union*, Vol. 90, A21C-0192, Dec 14-18, 2009.
37. Chahine, M., E. T. Olsen, **X. Jiang**, L. Chen, T. S. Pagano, and Y. L. Yung, 2009, AIRS mid-tropospheric CO₂ for application to chemistry transport models. *EOS Transactions American Geophysical Union*, Vol. 90, A43D-03, Dec 14-18, 2009.
38. **Jiang, X.**, M. Chahine, E. T. Olsen, L. Chen, and Y. L. Yung, 2009, Seasonal and interannual variability of mid-tropospheric CO₂ from Atmospheric Infrared Sounder. *EOS Transactions American Geophysical Union*, Vol. 90, A51A-0096, Dec 14-18, 2009.
39. Chahine, M., E. Olsen, **X. Jiang**, L. Chen, T. S. Pagano, and Y. L. Yung, 2010, 7-Years of AIRS mid-tropospheric CO₂. Sixth International Workshop on Greenhouse Gas Measurements from Space (IWGGMS), Japan, Jan 26-27, 2010.
40. **Jiang X.**, M. Chahine, E. Olsen, L. Chen, and Y. L. Yung, 2010, Interannual variability of AIRS CO₂. Pasadena, AIRS Science Team Meeting, Apr 21-23, 2010.
41. **Jiang X.**, and Y. L. Yung, 2010, Variability of Tropospheric CO₂ Observed by the Atmospheric Infrared Sounder, NASA Sounder Science Community Workshop, Greenbelt, Maryland, Nov 1-2, 2010.
42. Wang J., **X. Jiang**, M. Chahine, E. Olsen, L. Chen, and Y. Yung, 2010, Influence of Tropical Biennial Oscillation on Carbon Dioxide, *EOS Transactions American Geophysical Union*, Vol. 91, A51C-0130, Dec 13-17, 2010.
43. **Jiang X.**, M. Chahine, E. Olsen, L. Chen, and Y. Yung, 2010, Interannual variability of mid-tropospheric CO₂ from Atmospheric Infrared Sounder, *EOS Transactions American Geophysical Union*, Vol. 91, A54D-02, Dec 13-17, 2010.
44. Chahine M., E. Olsen, L. Chen, T. Pagano, **X. Jiang**, and Y. Yung, 2011, AIRS near-surface atmospheric CO₂ for modeling, transports and assimilation, 91st American Meteorological Society Annual Meeting, Jan 23-27, 2011.
45. **Jiang X.**, M. Chahine, J. Wang, E. Olsen, L. Chen, S. Licata, T. Pagano, and Y. L. Yung, 2011, Influence of Tropospheric Biennial Oscillation on AIRS CO₂. Pasadena, AIRS Science Team Meeting, Apr 26-29, 2011.
46. **Jiang X.**, E. Olsen, T. Pagano, L. Chen, S. Licata, and Y. L. Yung, 2011, CO₂ variations seen from nine years of AIRS data. Greenbelt, NASA Sounder Science Team Meeting, Nov 8-11, 2011.
47. **Jiang X.**, L. Li, M. Chahine, E. Olsen, E. Fetzer, L. Chen, and Y. L. Yung, 2011, Recycling rate of atmospheric moisture over the past two decades (1988-2009). Greenbelt, NASA Sounder Science Team Meeting, Nov 8-11, 2011.
48. **Jiang X.**, E. Olsen, S. Kulawik, C. E. Miller, and Y. Yung, 2011, Comparison between satellite CO₂ retrievals with in-situ measurements, *EOS Transactions American Geophysical Union*, Vol. 92, A33C-0217, Dec 5-9, 2011.
49. Olsen, E., **X. Jiang**, L. Chen, S. Licata, T. Pagano, and Y. Yung, 2011, Application of AIRS stratospheric CO₂ to investigate stratospheric transport and troposphere-stratosphere exchange, *EOS Transactions American Geophysical Union*, Vol. 92, A33C-0219, Dec 5-9, 2011.

50. Yung, Y., M. Liang, K. Li, **X. Jiang**, C.D. Camp, 2011, Solar cycle variability in tropical column ozone, *EOS Transactions American Geophysical Union*, Vol. 92, GC23A-0924, Dec 5-9, 2011.

51. Wang, J., **X. Jiang**, E. Olsen, T. Pagano, L. Chen, S. Licata, and Y. Yung, 2011, Variation of Polar CO₂ and O₃ during sudden stratospheric warming, *EOS Transactions American Geophysical Union*, Vol. 92, A33C-0235, Dec 5-9, 2011.

52. **Jiang, X.**, 2012, Investigation of CO₂ variability from different satellite retrievals, OCO2/ACOS Science Team Meeting, Feb 16-17, 2012.

53. Yung, Y. and **X. Jiang**, 2012, CO₂ profile retrieval, OCO2/ACOS Science Team Meeting, Feb 16-17, 2012.

54. **Jiang, X.**, 2012, Variations of AIRS CO₂ in the Polar Region, AIRS Science Team Meeting, Apr 24-27, 2012.

55. Pagano, T. S., H. Nguyen, E. Olsen, A. Ruzmaikin, and **X. Jiang**, 2012, Correlations of the seasonal variability of AIRS mid-tropospheric CO₂ with MODIS derived Gross Primary Productivity (GPP), IWGGMS-8, Jun 18-20, 2012.

56. **Jiang, X.**, 2012, Investigation of Arctic CO₂ Variability Using Observations and Model, IWGGMS-8, Jun 18-20, 2012.

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. She will work as a Caltech Postdoctoral Fellow.

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

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

UNDERGRADUATE STUDENTS:

1. James Houston Trammell (2011-2012)

James Trammell received the UH Provost's Undergraduate Research Scholarship in Spring 2012 and was admitted to the Honor Society of Phi Kappa Phi. James Trammell obtained BS degree in May 2012.

ALUMNI

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