

**Dr. Sun Wong**

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**Relevant Experience:**

Dr. Sun Wong is a research scientist III at Jet Propulsion Laboratory, Pasadena, California. He has experience in research of identifying interactions between the atmospheric constituents and the dynamical systems. He provides first class statistical analysis of many model simulations/assimilations (e.g., GISS, CCM3, CAM3, NCEP, GEOS4, MERRA, MATCH, CARMA, etc.) as well as remote-sensing retrievals (e.g., MODIS aerosols, AIRS temperature and water vapor, Aura MLS water vapor and CO, AVHRR dust index, etc.). He has important publications on the heating effects of Saharan dust, subseasonal to multidecadal variability of temperature, water vapor, and chemical constituents in the upper troposphere/lower stratosphere, and distribution of Saharan dust over the tropical Atlantic.

**Education:**

The Chinese University of Hong Kong, B.S. in Physics (with honor), 1992

Columbia University, M.A. and M.Phil. in Physics, 1995

Columbia University, Ph.D. in Physics, 1999

**Employment:**

2009-present: Research Scientist, Jet Propulsion Laboratory, Pasadena, CA

2005-2009: Assistant Research Scientist, Department of Atmospheric Science, Texas A&M University, College Station, TX.

2003-2005: Postdoctoral Research Associate, Earth System Science Interdisciplinary Center, University of Maryland, College Park, MD.

1999-2003: Postdoctoral Research Associate, Atmospheric Science Research Center, State University of New York at Albany, Albany, NY.

**Experience and Service:**

2007: Convener and chair of the session “The Role of Dust in the Global Climate System” in 2007 AGU spring meeting in Acapulco, Mexico

2006 Fall: Lectured in graduate level class, Climate Modeling (ATMO 631), for Prof. Andrew E. Dessler. Covered special topics such as deep convective parameterization and advection schemes in GCMs

2005-present: Reviewer for *Science*, *Geophys. Res. Lett.* (AGU), *J. Geophys. Res.* (AGU), *J. Appl. Met. and Clim.* (AMS), *Atmos. Env.*, and *Annales Geophysicae* (EGU)

2000-2003: Building a coupled tropospheric climate-chemistry model based on NCAR CCM3 and UiO chemistry module.  
1999-2000: Conducted long-term climate simulation in SUNY at Albany for the Atmospheric Model Intercomparison Project 2 (AMIP2)  
1992-1994: Taught undergraduate laboratory sections in the Physics Department of Columbia University

### **Honor and Award:**

2005: Article “Suppression of deep convection over the tropical North Atlantic by the Saharan Air Layer” highlighted by *Geophys. Res. Lett.*

### **Publications:**

- Wong, S.**, A. E. Dessler, N. M. Mahowald, P. Yang, and Q. Feng (2009), Maintenance of lower tropospheric temperature inversion in the Saharan Air Layer by dust and dry anomaly, *J. Clim.*, **22**, 5149-5162.
- A. E. Dessler and **S. Wong** (2009 *J. Climate* accepted), Climate model simulations of the water vapor climate feedback during the El Niño Southern Oscillation, *J. Clim.*, **22**, 6404-6412.
- Wong, S.**, A. E. Dessler, N. M. Mahowald, P. R. Colarco, and A. da Silva (2008), Long-term variability in Saharan dust transport and its link to North Atlantic sea surface temperature, *Geophys. Res. Lett.*, **35**, doi:10.1029/2007GL032297.
- Wong, S.**, and A. E. Dessler (2007), Regulation of H<sub>2</sub>O and CO in tropical tropopause layer by the Madden-Julian oscillation, *J. Geophys. Res.*, **112**, D14305, doi:10.1029/2006JD007940.
- Wong, S.**, P. R. Colarco, and A. E. Dessler (2006), Principal component analysis of the evolution of the Saharan Air Layer and dust transport: Comparisons between a model simulation and MODIS and AIRS retrievals, *J. Geophys. Res.*, **111**, D20109, doi:10.1029/2006JD007093.
- Wong, S.**, and A. E. Dessler (2005), Suppression of deep convection over the tropical North Atlantic by the Saharan Air Layer, *Geophys. Res. Lett.*, **32**, L09808, doi:10.1029/2004GL022295
- Wong, S.**, W. -C. Wang, I. S. A. Isaksen, T. K. Berntsen, and J. K. Sundet (2004), A global climate-chemistry model study of present-day tropospheric chemistry and radiative forcing from changes in tropospheric O<sub>3</sub> since the preindustrial period, *J. Geophys. Res.*, **109**, D11309, doi:10.1029/2003JD003998.
- Gauss, M., I. S. A. Isaksen, **S. Wong**, and W. -C. Wang (2003), Impact of H<sub>2</sub>O emissions from cryoplanes and kerosene aircraft on the atmosphere, *J. Geophys. Res.*, **108**(D10), 4304, doi:10.1029/2002JD002623.
- Wong, S.**, and W. -C. Wang (2003), Tropical-extratropical connection in interannual variation of the tropopause: Comparison between NCEP/NCAR reanalysis and an

atmospheric general circulation model. *J. Geophys. Res.*, 108(D2), 4043, doi:10.1029/2001JD002016.

**Wong, S.**, and W. -C. Wang (2000), Interhemispheric asymmetry in the seasonal variation of the zonal mean tropopause. *J. Geophys. Res.*, 105, 26,645-26,659.

**Wong, S.**, M. J. Prather, and D. Rind (1999), The seasonal and interannual variability of the budgets of N<sub>2</sub>O and CCl<sub>3</sub>F. *J. Geophys. Res.*, 104, 23,899-23,909.

Shindell, D. T., **S. Wong**, and D. Rind (1997), Interannual variability of the Antarctic ozone hole in a GCM. Part I: The influence of tropospheric wave variability. *J. Atmos. Sci.*, 54, 2308-2319.

### **Submitted Publications:**

**Sun Wong**, Eric J. Fetzer, Baijun Tian, Bjorn H. Lambriksen, and Hengchun Ye (2011): The apparent water vapor sinks and heat sources associated with the intra-seasonal oscillation of the Indian summer monsoon, *J. Clim* (under review)

**Sun Wong**, Eric J. Fetzer, Brian H. Kahn, Baijun Tian, Bjorn H. Lambriksen, and Hengchun Ye (2011): Closing the global water budget with AIRS water vapor, MERRA winds, and evaporation, and TRMM precipitation, *J. Clim.* (under review)

Baijun Tian, Duane E. Waliser, Ralph A. Kahn, and **Sun Wong** (2011): Modulation of Atlantic aerosols by the Madden-Julian Oscillation, *J. Geophys. Res.*, (under review)

Andrey Savtchenko, **Sun Wong**, Eric J. Fetzer, and Bruce Vollmer (2011): Atmospheric Infrared Sounder (AIRS) observation of 2010 La Niña, *J. Clim.* submitted