**Dr. Sun Wong**
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**Relevant Experience**:

Dr. Sun Wong is a research scientist at Jet Propulsion Laboratory. He has publications on evaluation of chemical transport models and climate models on various scientific topics. These include evaluation of planetary wave activity in the stratosphere in GISS GCMAM, seasonal and interannual tropopause variability simulated by NCAR CCM3, tropospheric chemistry simulation in a coupled chemistry-climate model (University of Oslo tropospheric chemistry module coupled with CCM3), dust transport in CARMA and MATCH, dust radiative heating in NCAR CAM3, and water vapor climate feedback in IPCC AR4 models. He also has publications of investigating physical processes using satellite-based measurements. Recently, he has performed inter-comparison of observation-based estimates and MERRA atmospheric water and energy budgets to assess the current status of the closure issues.

**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:**

2005-present: Reviewer for *Science*, *Geophys. Res. Lett.* (AGU), *J. Geophys. Res.* (AGU), *J. Climate* (AMS), *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)

**Honor and Award:**

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

**Seclected Publications**:

**Wong, S.,** T. S. L'Ecuyer, W. S. Olson, X. Jiang, and E. J. Fetzer (2014), Local balance and variability of atmospheric heat budget over oceans: Observation and reanalysis-based estimates. *J. Climate*, **27**, 893-913.

Jiang, X., T. L. Kubar, **S. Wong**, W. S. Olson, and D. E. Waliser (2014), Modulation of marine low clouds associated with the tropical intraseasonal variability over the eastern Pacific. *J. Climate*, in press

Ye, H., E. J. Fetzer, **S. Wong**, A. Behrangi, E. T. Olsen, J. Cohen, B. H. Lambrigtsen, and L. Chen (2014), Impact of increased water vapor on precipitation efficiency over northern Eurasia, *Geophys. Res. Lett.*, in press.

Behrangi, A., **S. Wong**, K. Mallick, J. Fisher (2014), On the net surface water exchange rate estimated from remote sensing observation and reanalysis, *International J. of Remote Sensing*, in press.

Yue, Q., E. J. Fetzer, B. H. Kahn, **S. Wong**, G. Manipon, A. Guillaume, and B. Wilson (2013), Cloud-state dependent sampling in AIRS observations based on CloudSat cloud classification. *J. Climate*, **26**, 8357-8377.

Guo, Y., B. Tian, R. A. Kahn, O. Kalashnikova, **S. Wong**, and D. E. Waliser (2013), Tropical Atlantic dust and smoke aerosol variations related to the Madden-Julian Oscillation in MODIS and MISR observations, J. Geophys. Res. Atmos.,118, 4947–4963, doi:10.1002/jgrd.50409.

A. Behrangi, M. Lebsock, **S. Wong**, and Bjorn Lambrigtsen (2012), On the quantification of oceanic rainfall using spaceborne sensors, *J. Geophys. Res.*, **117**, doi:10.1020/2012JD017979.

**Wong, S.,** E. J. Fetzer, B. H. Kahn, B. Tian, B. H. Lambrigtsen, and H. Ye (2011), Closing the global water vapor budget with AIRS water vapor, MERRA reanalysis, TRMM and GPCP precipitation, and GSSTF surface evaporation, *J. Climate*, **24**, 6307-6321.

**Wong, S.**, E. J. Fetzer, B. Tian, B. H. Lambrigtsen, and H. Ye (2011), The apparent water vapor sinks and heat sources associated with the intraseasonal oscillation of the Indian summer monsoon, *J. Climate*, **24**, 4466-4479.

Liang, C. K., A. Eldering, A. Gettelman, B. Tian, **S. Wong**, E. J. Fetzer, and K. N. Liou (2011): Record of tropical interannual variability of temperature and water vapor from a combined AIRS-MLS dataset, *J. Geophys. Res.*, **116**, doi:10.1029/2010JD014841.

Tian, B., D. E. Waliser, R. A. Kahn, and **S. Wong** (2011): Modulation of Atlantic aerosols by the Madden-Julian oscillation, *J. Geophys. Res.*, **116**, doi:10.1029/2010JD015201.

**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), 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 $H_2O$ and CO in tropical tropopause layer by the Madden-Julian oscillation, *J. Geosphys. 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 $O_3$ 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 $H_2O$ 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 $N_2O$ and $CCl_3F$. *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.

**<u>Manuscripts in Preparation</u>:**

**Wong, S.,** E. J. Fetzer, M. Schreier, G. Manipon, E. F. Fishbein, B. H. Kahn, Q. Yue, and F. W. Irion (2014), Cloud-induced uncertainties in AIRS and ECMWF temperature and specific humidity. In preparation for JGR.

**Wong, S.,** and J. Teixeira (2014), Extreme weather and tropical climate: Scaling of extremely cold brightness temperature over the ocean to tropical sea surface temperature and possible implications for global warming. In preparation.