

# Yangyang Xu

Texas A&M University  
College Station, Texas 77843-3150

yangyang.xu@tamu.edu  
<http://yangyangxu.weebly.com>

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## **Education**

- 2014 Ph.D. Earth Sciences Scripps Institution of Oceanography, University of California, San Diego
- 2011 M.S. Oceanography Scripps Institution of Oceanography, University of California, San Diego
- 2008 B.S. Atmospheric Sciences School of Physics, Peking University

## **Professional Appointments**

- Sep. 2016 - now Assistant Professor  
Department of Atmospheric Sciences, College of Geosciences, Texas A&M University
- May. 2016 - Aug. 2016 Project Scientist I  
Climate Change Research Section, Climate and Global Dynamics Lab, NCAR
- Oct. 2014 - Apr. 2016 ASP Postdoctoral Fellow  
Advanced Study Program, National Center for Atmospheric Research
- Feb. 2014 - Sep. 2014 Visitor (postdoctoral)  
Climate and Global Dynamics Division, National Center for Atmospheric Research
- Feb. 2013 - Dec. 2013 Visitor (graduate student)  
Advanced Study Program, National Center for Atmospheric Research
- Sep. 2008 - Dec. 2013 Graduate Student Researcher  
Scripps Institution of Oceanography, University of California, San Diego

## **Research Interests**

Climate impact of GHGs and aerosols, radiative forcing of aerosols, air pollutions and air quality, hydrological cycle and hydroclimate, climate change impact and mitigation.

## **Awards**

- 2014 ASP Postdoctoral Fellowship. NCAR/Advanced Study Program.
- 2013 Graduate Student Excellence Travel Award. Scripps Institution of Oceanography.
- 2013 Chinese Government Award for Outstanding Self-Financed Students Aboard.
- 2012 Graduate Visitor Program funding. NCAR/Advanced Study Program.

## **Publications**

(See recent updates at <http://yangyangxu.weebly.com/publication.html>)

Xu, Y., V. Ramanathan, and W. M. Washington (2016), Observed high-altitude warming and snow cover retreat over Tibet and the Himalayas enhanced by black carbon aerosols, *Atmospheric Chemistry and Physics*, 16(3), 1303–1315, doi:10.5194/acp-16-1303-2016.

Lin, L., A. Gettelman, Q. Fu, and Y. Xu (2016), Simulated differences in 21st century aridity due to different scenarios of greenhouse gases and aerosols, *Climatic Change*, 1–16, doi:10.1007/s10584-016-1615-3.

Lin, L., A. Gettelman, Y. Xu, and Q. Fu (2016), Simulated responses of terrestrial aridity to black carbon and sulfate aerosols, *Journal of Geophysical Research: Atmospheres*, n/a–n/a, doi:10.1002/2015JD024100.

Wang, Z., L. Lin, M. Yang, and Y. Xu (2016), The effect of future reduction in aerosol emissions on climate extremes in China, *Climate Dynamics*, 1–15, doi:10.1007/s00382-016-3003-0.

Xu, Y., J.-F. Lamarque, and B. M. Sanderson (2015), The importance of aerosol scenarios in projections of future heat extremes, *Climatic Change*, 1–14, doi:10.1007/s10584-015-1565-1.

Pendergrass, A. G., F. Lehner, B. M. Sanderson, and Y. Xu (2015), Does extreme precipitation intensity depend on the emissions scenario?, *Geophysical Research Letters*, 42, 8767–8774, doi:10.1002/2015GL065854.

Xu, Y., and S.-P. Xie (2015), Ocean mediation of tropospheric response to reflecting and absorbing aerosols, *Atmospheric Chemistry and Physics*, 15(10), 5827–5833, doi:10.5194/acp-15-5827-2015.

Xu, Y. (2014), Climate effects of black carbon and the emission reduction for mitigating climate change. Ph.D. Dissertation. University of California, San Diego. 208pp. (Committee: Veerabhadran Ramanathan, Warren M. Washington, Lynn Russell, Lynne Talley, David Victor, Guang J. Zhang)

Xu, Y., and D. Zaelke (2013), Unpacking the problem. *Our Planet - The magazine of the United Nations Environment Programme*. December 2013 issue, pp24–25.

Xu, Y., R. Bahadur, C. Zhao, and L. R. Leung (2013), Estimating the radiative forcing of carbonaceous aerosols over California based on satellite and ground observations, *Journal of Geophysical Research: Atmospheres*, 118(19), 11148–11160, doi:10.1002/jgrd.50835.

Xu, Y., D. Zaelke, G. J. M. Velders, and V. Ramanathan (2013), The role of HFCs in mitigating 21st century climate change, *Atmospheric Chemistry and Physics*, 13(12), 6083–6089, doi:10.5194/acp-13-6083-2013.

Hu, A., Y. Xu, C. Tebaldi, W. M. Washington, and V. Ramanathan (2013), Mitigation of short-lived climate pollutants slows sea-level rise, *Nature Climate Change*, 3(8), 730–734, doi:10.1038/nclimate1869.

Bahadur, R., P. S. Praveen, Y. Xu, and V. Ramanathan (2012), Solar absorption by elemental and brown carbon determined from spectral observations, *Proceedings of the National Academy of Sciences*, 109(43), 17366–17371, doi:10.1073/pnas.1205910109.

Xu, Y., and V. Ramanathan (2012), Latitudinally asymmetric response of global surface temperature: Implications for regional climate change, *Geophysical Research Letters*, 39(13), L13706, doi:10.1029/2012GL052116.

Ramanathan, V., and Y. Xu (2010), The Copenhagen Accord for limiting global warming: criteria, constraints, and available avenues, *Proceedings of the National Academy of Sciences*, 107(18), 8055–8062, doi:10.1073/pnas.1002293107.

Xu, Y., S. Liu, F. Hu, N. Ma, Y. Wang, Y. Shi, and H. Jia (2009), Influence of Beijing urbanization on the characteristics of atmospheric boundary layer, *Chinese Journal of Atmospheric Sciences*, 33(4), 859–867, doi:10.3878/j.issn.1006-9895.2009.04.18.

## **Select Seminars and Talks**

Climate Change Mitigation: Dealing with Near-Term Threats and The Range of Probable Outcomes. A UCSD workshop on the 1.5°C global warming. La Jolla, California. Oct 20, 2016.

Aerosol and climate interactions in CESM1. The 7th International Conference on Atmosphere, Ocean, and Climate Change. China Meteorology Administration. Beijing, China. Jul 30, 2016. (Invited)

Aerosol and climate interactions in CESM1. CESM annual workshop. Breckenridge, CO. Jun 23, 2016. (Invited)

The importance of aerosol scenarios in projections of future heat extremes. CESM annual workshop. Breckenridge, CO. Jun 21, 2016.

Studying climate and chemistry interactions with CESM1 and beyond. ACOM tropospheric chemistry group meeting. Boulder, CO. May 27, 2016. (Invited)

How do air Pollutions and climate affect each other: a CESM investigation. NCAR/LLNL teleconference. Boulder, CO. May 9, 2016.

How do air Pollutions and Climate affect each other: a CESM investigation. NCAR Networking and Discovery Day. NCAR. Boulder, CO. Apr 22, 2016.

The role of short-lived climate pollutants in the past and future climate change: observational constraints and model projections. Department of Atmospheric Sciences. Texas A&M University. College Station, TX. Mar 3, 2016. (Invited)

The role of short-lived climate pollutants in climate change: heat extremes and mid-latitude circulation changes. ASP Research Review. NCAR. Boulder, CO. Feb 12, 2016.

The importance of aerosol scenarios in projections of future heat extremes. The 96th AMS Annual Meeting. New Orleans, LA. Jan 13, 2016.

The role of short-lived climate pollutants in climate change. ASP research review. NCAR. Boulder, CO. May 6, 2015.

Projection of future heat extremes depends on scenarios of GHGs and aerosols. CESM Social Dimension Working Group meeting. NCAR. Boulder, CO. Mar 5, 2015.

Pattern of climate response to CO<sub>2</sub>, sulfate and black carbon in CESM1. The 95th AMS Annual Meeting. Phoenix, AZ. Jan 8, 2015.

Observed high-altitude warming and snow cover retreat over Tibet and the Himalayas enhanced by black carbon. AGU 2014 Fall Meeting. San Francisco, CA. Dec 16, 2014.

Radiative forcing of carbonaceous aerosols over California. The 2nd Gregory G Leptoukh Online Giovanni Workshop. NASA Goddard Earth Sciences Data and Information Services Center. Nov 13, 2014.

The role of HFCs in mitigating 21st century climate change. AGU 2013 Fall Meeting. San Francisco, CA. Dec 10, 2013.

Black carbon's climate impact in CESM. Climate and Global Dynamic Division Seminar. NCAR. Boulder, CO. Dec 3, 2013.

Implication of short-lived climate pollutants: 21st century global temperature and sea level rise. Chinese-American Oceanic and Atmospheric Association workshop. UC Irvine. Irvine, CA. Oct 20, 2012. (Best Presentation Award)

Implication of short-lived climate pollutants: global temperature and sea level rise in 21st century. ABC (Atmospheric Brown Clouds) science and implementation meeting. Peking University. Beijing, China. Sep 12, 2012.

Quantify radiative forcing of black carbon using satellite data. Center for Climate Sciences Summer School - Using Satellite Observations to Advance Climate Models. Jet Propulsion Laboratory. Pasadena, CA. August 12, 2011.

## **Teaching and Mentoring Experiences**

### **Teaching:**

- Instructor for ATMO321 (Spring, 2017)

**Mentoring:**

- Ph.D. student (Xiaokang Wu, 2017-now)
- M.S. student (Chenrui Diao, 2016-now)

**Previously at NCAR:**

- Computing mentor for a visiting undergraduate student from New Mexico Institute of Mining and Technology, SOARS (Significant Opportunities in Atmospheric Research and Science) program. (Summer, 2016)
- Providing research advice to a visiting graduate student from Lanzhou University (2014-2015)

**Previously at Scripps/UCSD:**

- Guest speaker for UCSD Extension massive online open course (MOOC): Climate Change in Four Dimensions (Fall, 2014)
- Assisting in SIO217c “Atmospheric and Climate Sciences III” (Spring, 2011 and 2012)
- Mentoring a visiting undergraduate student from University of Michigan (Summer, 2010)

**Service Experiences**

**At the Department:**

- Coordinator for the Departmental Seminar series (Spring, 2017)
- Ph.D. Thesis committee member for Lu Sun (2017-now)

**As Anonymous Reviewer for:**

Proceedings of the National Academy of Sciences, Scientific Reports, Journal of Climate, Journal of Geophysical Research-Atmosphere, Climate Dynamics, Geophysics Research Letters, Atmospheric Chemistry and Physics, Environmental Research Letters, Advances of Atmospheric Sciences, Atmospheric Science Letters, Advances in Meteorology, Atmospheric Research, Natural Hazards, Pure and Applied Geophysics, Earth and Space Science.

**As Internal reviewer for:**

Institute for Governance and Sustainable Development, NCAR,  
Advisory Panel for World Bank on a study of Himalayan Glaciers (2016-2017)

**Previously at NCAR:**

- Member of ASP Seminar Committee (2014-2016)
- Co-manager of ASP Supercomputer allocations (2014-2015)

**Previously at Scripps/UCSD:**

- Member of Ad-hoc committee for faculty and lecturer teaching evaluations (2012)