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EDUCATION

Ph.D. University of Illinois at Urbana-Champaign, August 2010
Emphasis: *stratospheric dynamics*; Advisor: *Walter A. Robinson*
M.S. and B.S. Peking University, May 2005 and 2002

RESEARCH INTEREST

Large-scale atmospheric dynamics and dynamics of Earth's climate

- Arctic sea ice loss and its impact
- Stratosphere-troposphere dynamical coupling
- El Niño-Southern Oscillation teleconnection
- Numerical modeling

EXPERIENCES

2015 – Present Research Scientist, CU-Boulder CIRES/NOAA ESRL PSD
2013 – 2015 Postdoctoral Associate with Clara Deser, NCAR
2010 – 2013 Postdoctoral Fellow with Gang Chen, Cornell University
2005 – 2009 Research Assistant with Walt A. Robinson, University of Illinois
2002 – 2005 Research Assistant with Huiding Wu, Peking University

SELECTED PUBLICATIONS

- **Sun, L.**, C. Deser and R. A. Tomas, 2015: Mechanisms of stratospheric and tropospheric circulation response to projected Arctic sea ice loss. *J. Climate*, Submitted.
- Screen, J. A., C. Deser and **L. Sun**, 2015: Reduced risk of North American cold extremes due to continued sea ice loss. *Bull. Amer. Met. Soc.*, In press.
- Deser, C., R. A. Tomas and **L. Sun**, 2015: The role of ocean-atmosphere coupling in the zonal-mean atmospheric response to Arctic sea ice loss. *J. Climate*, **28**, 2168–2186. doi: <http://dx.doi.org/10.1175/JCLI-D-14-00325.1>.
- Yang, H., **L. Sun** and G. Chen, 2015: Separating transient responses to stratospheric ozone depletion-like springtime cooling in an idealized atmospheric model, *J. Atmos. Sci.*, **72**, 763–773. doi: 10.1175/JAS-D-13-0353.1.
- **Sun, L.**, C. Deser, L. Polvani and R. A. Tomas, 2014: Influence of projected Arctic sea ice loss on polar stratospheric ozone and circulation in spring, *Environ. Res. Lett.*, **9** 084016, doi:10.1088/1748 9326/9/8/084016.
- **Sun, L.**, G. Chen and W. A. Robinson, 2014: The role of stratospheric polar vortex breakdown in Southern Hemisphere climate trends, *J. Atmos. Sci.*, **71**, 2335-2353. doi:10.1175/JAS-D-13-0290.1.

- Lu, J., **L. Sun**, Y. Wu and G. Chen, 2014: The role of irreversible PV mixing in the zonal mean circulation response to global warming-like thermal forcing, *J. Climate*, **27**, 2297-2316, doi:10.1175/JCLI-D-13-00372.1.
- **Sun, L.**, G. Chen and J. Lu, 2013: Sensitivities and mechanisms of the zonal mean atmospheric circulation responses to tropical warming, *J. Atmos. Sci.*, **70**, 2487-2504, doi:10.1175/JAS-D-12-0298.1.
- Domeisen, D., **L. Sun** and G. Chen, 2013: The role of synoptic eddies in the tropospheric response to stratospheric variability. *Geophys. Res. Lett.*, **40**, 49334937, doi:10.1002/grl.50943.
- Chen, G., J. Lu, **L. Sun**, 2013: Delineating the Eddy-Zonal Flow Interaction in the Atmospheric Circulation Response to Climate Forcing: Uniform SST Warming in an Idealized Aqua-planet Model. *J. Atmos. Sci.*, **70**, 2214-2233, doi:10.1175/JAS-D-12-0248.1.
- **Sun, L.**, W. A. Robinson and G. Chen, 2012: The predictability of stratospheric warming events: more from the troposphere or the stratosphere? *J. Atmos. Sci.*, **69**, 768-783, doi:10.1175/JAS-D-11-0144.1.
- Chen, G. and **L. Sun**, 2011: Mechanisms of the tropical upwelling branch of the Brewer-Dobson Circulation: the role of extratropical waves. *J. Atmos. Sci.*, **68**, 2878-2892, doi:10.1175/JAS-D-11-044.1.
- **Sun, L.**, W. A. Robinson and G. Chen, 2011: The role of planetary waves in the downward influence of stratospheric final warming events. *J. Atmos. Sci.*, **68**, 2826-2843, doi:10.1175/JAS-D-11-014.1.
- **Sun L.** and W. A. Robinson, 2009: Downward influence of stratospheric final warming events in an idealized model, *Geophys. Res. Lett.*, **36**, L03819, doi:10.1029/2008GL036624.

SELECTED PRESENTATIONS

- Seminar (**invited**), *Atmospheric circulation and surface climate response to projected Arctic sea ice loss*. Cornell University, Ithaca, NY, February 2015.
- Conference talk, *The importance of the stratospheric pathway of El Niño-Southern-Oscillation teleconnections: a modeling study with WACCM*, 27th Conference on Climate Variability and Change, Phoenix, AZ, January 2015.
- Conference talk, *Sensitivity of stratospheric circulation response to different geographic locations of the Arctic sea ice loss*, 18th conference on middle atmosphere, Phoenix, AZ, January 2015.
- Poster, *Atmospheric circulation response to projected Arctic sea ice loss in WACCM*, International workshop on polar-lower latitude linkages, Barcelona, Spain, December 2014.
- Seminar, *Atmospheric circulation and surface climate response to projected Arctic sea ice loss*. NCAR CGD seminar, Boulder, CO, October 2014.
- Seminar (**invited**), *Atmospheric circulation and surface climate response to projected Arctic sea ice loss*. NOAA physical science division (PSD) seminar, Boulder, CO, September 2014.
- Conference talk, *Impact of future Arctic sea ice loss on the troposphere and stratosphere*. CESM Workshop, Breckenridge, CO, June 2014.

- Talk, *Impact of future Arctic sea ice loss on the troposphere and stratosphere*, Department of atmospheric sciences, Fort Collins, CO, May 2014.
- Talk (**invited**), *ozone and the stratosphere*. Ball Aerospace Company, Boulder, CO, April 2014.
- Conference talk, *on the atmospheric circulation response to Arctic sea ice loss*. CESM Climate Variability and Change Workshop, NCAR, Boulder, CO, March 2014.
- Conference talk, *Arctic ozone reduction associated with projected sea ice loss*. American Geophysical Union annual conference, San Francisco, CA, December 2013.
- Poster, *Tropospheric response to an ozone depletion-like polar stratospheric cooling*, American Geophysical Union annual conference, San Francisco, CA, December 2013.
- Talk, *Arctic ozone reduction associated with projected sea ice loss*. CGD research report, National Center for Atmospheric Research, Boulder, CO, September 2013.
- Poster, *The role of stratospheric polar vortex breakdown in Southern Hemisphere climate trends*, American Geophysical Union annual conference, San Francisco, CA, December 2012.
- Poster, *Sensitivities and mechanisms of the zonal mean atmospheric circulation responses to tropical warming*, American Geophysical Union annual conference, San Francisco, CA, December 2012.
- Seminar (**invited**), *The predictability of stratospheric warming events: more from the troposphere or the stratosphere?* Department of Earth, Atmospheric and Planetary Sciences, MIT, Cambridge, MA, November 2012.
- Seminar (**invited**), *The predictability of stratospheric warming events: more from the troposphere or the stratosphere?* School of Marine and Atmospheric Sciences, Stony Brook University, Stony Brook, NY, September 2012.
- Poster, *The role of stratospheric polar vortex breakdown in Southern Hemisphere climate trends*, WCRP open science conference, Denver, CO, October 2011.
- Conference talk, *The role of planetary waves in the downward influence of stratospheric final warming events*. 16th conference on middle atmosphere, Seattle, WA, January 2011.
- Poster, *The predictability of stratospheric warming events: more from the troposphere or the stratosphere?* 16th conference on middle atmosphere, Seattle, WA, January 2011.
- Poster, *Downward influence of stratospheric final warming events in an idealized model*, 15th conference on middle atmosphere, Stowe, VT, June 2009.
- Conference talk, *Modeling the downward influence of stratospheric final warming events*, Chapman Conference on the Role of the Stratosphere in Climate and Climate Change, Santorini, Greece, September 2007.
- Poster, *Modeling the downward influence of stratospheric final warming events*, Fifth Annual UIUC Earth research review, Urbana, IL, April 2006.

PROFESSIONAL MEMBERSHIPS

American Geophysical Union (AGU; since 2007)
American Meteorological Society (AMS; since 2007)

JOURNAL REVIEWING

Journal of the Atmospheric Sciences, Journal of Climate, Journal of climatology, Journal of Geophysical Research: atmospheres, Journal of Atmospheric and Solar-Terrestrial Physics, Geophysical Research Letters, the Acta Meteorologica Sinica, Climate Dynamics.

TECHNICAL SKILLS

- Programing: FORTRAN 90/95, Linux/UNIX, Shell script, NCO
- Visualization: NCL, Matlab, GrADS, Ferret, Adobe illustrator
- GCM Models: CESM CAM/WACCM, GFDL dynamical model

INTERDISCIPLINARY ACTIVITIES

- FORTRAN Scientific Workshop, Boulder, CO, June 2014 (attendee).
- Teaching Methods Workshop, Boulder, CO, April 2014 (attendee).
- CESM tutorial, Boulder, CO, August 2013 (auditor)
- NCL Workshop, Boulder, CO, June 2013 (auditor).
- Virtual School of Computational Science and Engineering, summer school 2009: Scaling to Petascale, Urbana, IL, August 2009 (attendee).
- ASP Summer Colloquium on Numerical Techniques for Global Atmospheric Models, NCAR, Boulder, CO, June 2008 (attendee).