

July 2018

**John R. Albers, Ph. D.**

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Cooperative Institute for Research in the Environmental Sciences  
University of Colorado  
and  
Earth System Research Laboratory – Physical Science Division  
National Oceanic and Atmospheric Administration  
Boulder, CO USA

**Education**

Ph.D. – Atmospheric Science, University of California-Davis, September 2012  
B.S. – Atmospheric Science, University of Wisconsin-Madison, January 2005  
B.S. – Applied Mathematics, University of Wisconsin-Madison, January 2005

**Research Interests**

I) Large-scale atmospheric dynamics including: Rossby wave dynamics, teleconnections, sudden stratospheric warmings, stratosphere-troposphere coupling, subseasonal-to-seasonal prediction, extratropical-tropical interactions  
II) Stratosphere-troposphere exchange including: potential vorticity intrusions, effects of stratospheric trace constituents on tropospheric air quality  
III) Stratospheric chemistry including: couplings between radiation, chemistry, and large-scale waves and climate change in the middle atmosphere

**Appointments**

April. 2018-present Research Scientist II, Cooperative Institute for Research in the Environmental Sciences (CIRES), University of Colorado – Boulder (Supervisor: Dr. Matthew Newman-CIRES, Science Advisor: George Kiladis)  
Jan. 2016-April 2018 Research Scientist I, Cooperative Institute for Research in the Environmental Sciences (CIRES), University of Colorado – Boulder (Supervisor: Dr. Judith Perlwitz-CIRES, Science Advisor: George Kiladis)  
Jan. 2014-Dec. 2015 National Science Foundation Atmospheric and Geospace Science Postdoctoral Fellow, Cooperative Institute for Research in the Environmental Sciences (CIRES), University of Colorado – Boulder (Supervisors: Drs. Judith Perlwitz-CIRES and Thomas Birner-Colorado State University)  
Oct. 2013-Dec. 2013 Postdoctoral research associate, Cooperative Institute for Research in the Environmental Sciences (CIRES), University of Colorado – Boulder (Supervisors: Drs. Judith Perlwitz and George Kiladis)  
Jan. 2013-Sept. 2013 Postdoctoral research fellow, Colorado State University Department of Atmospheric Science (Supervisor: Prof. Thomas Birner)  
Fall 2005-Aug. 2012 Graduate student researcher, University of California-Davis Department of Land, Air, Water Resources - Atmospheric Science Program (Advisor: Prof. Terrence R. Nathan)  
Fall 2004 Student research employee (focus: nonlinear dynamics), University of California-Davis Center for Computational Sciences (Advisor: Prof. James P. Crutchfield)  
Summer 2004 Undergraduate research intern (focus: nonlinear dynamics), Santa Fe Institute (Advisor: Prof. James P. Crutchfield)  
Summer 2003 National Science Foundation research experiences for undergraduates, Santa Fe Institute (Advisor: Prof. James P. Crutchfield)

**External activities**

Oct. 2017 **Invited lecturer** (2 weeks) – Advanced School on Tropical-Extratropical Interactions on Intra-Seasonal Time Scales, International Centre for Theoretical Physics, Trieste, Italy  
Nov. 2017-present **Associate editor** – American Meteorological Society *Monthly Weather Review*

**Fellowships and Awards**

Jan. 2017 Bulletin of the American Meteorological Society Editor's Award

- Jan. 2014-Dec. 2015 National Science Foundation Atmospheric and Geospace Sciences Postdoctoral Fellowship. Project title: *A Hierarchical Modeling Approach to Quantifying the Effects of Changes in Ozone and Solar Variability on the Brewer-Dobson Circulation and Tropospheric Climate.*
- Summer 2011 Best graduate student presentation award – 18<sup>th</sup> American Meteorological Society Conference on Atmospheric and Oceanic Fluid Dynamics in Spokane, WA
- Spring 2010 University of California-Davis Henry A. Jastro Graduate Research Scholarship
- Summer 2009 University of California-Davis Office of Graduate Studies – Graduate Student Travel Award
- Summer 2007 University of California-Davis Office of Graduate Studies – Graduate Student Research Fellowship

## Publications

- Albers, J. R.**, J. Perlwitz, A. H. Butler, T. Birner, G. N. Kiladis, Z. D. Lawrence, G. L. Manney, A. O. Langford, J. Dias (2018): Mechanisms governing interannual variability of stratosphere to troposphere ozone transport. *Journal of Geophysical Research*, **123**, 234-260.
- de la Camara, A., **J. R. Albers**, T. Birner, R. R. Garcia, P. Hitchcock, D. E. Kinnison, A. K. Smith (2017): Sensitivity of sudden stratospheric warmings to previous stratospheric conditions. *Journal of the Atmospheric Sciences*, **74**, 2857-2877.
- Birner, T. and **J. R. Albers** (2017): Sudden stratospheric warmings and anomalous upward wave activity flux. *SOLA*, **13A**, 8-12, doi:10.2151/sola.13A-002.
- Albers, J. R.**, G. N. Kiladis, T. Birner, and J. Dias (2016): Tropical upper tropospheric potential vorticity intrusions during sudden stratospheric warmings. *Journal of the Atmospheric Sciences*, (73), 2361-2384.
- Albers, J. R.** and T. Birner, (2014): Relative roles of gravity and planetary waves in vortex preconditioning prior to sudden stratospheric warmings. *Journal of the Atmospheric Sciences*, **71**, 4028-4054.
- Albers, J. R.** and T. R. Nathan, (2013): Ozone loss and recovery and the preconditioning of upward propagating planetary wave activity. *Journal of the Atmospheric Sciences*, **70**, 3977-3994.
- Albers, J. R.**, J. P. McCormack, and T. R. Nathan, (2013): Ozone and the morphology of the planetary waveguide. *Journal of Geophysical Research*, **118**, 563-576.
- Albers, J. R.**, and T. R. Nathan, (2012): Pathways for communicating the effects of stratospheric ozone to the polar vortex: Role of zonally asymmetric ozone. *Journal of the Atmospheric Sciences*, **69**, 785-801.
- Nathan, T. R., **J. R. Albers**, and E. C. Cordero, (2011): Role of wave-mean flow interaction in sun-climate connections: Historical overview and some new interpretations and results. *Journal of Atmospheric and Solar-Terrestrial Physics*, **73**, 1594-1605.

## Recent Conference Presentations

- 26 June – 30 June 2017 **American Meteorological Society 19<sup>th</sup> Conference on the Middle Atmosphere**, Portland, Oregon (poster) – “Differences in stratospheric radiative-dynamical feedbacks in middle versus polar latitudes”
- 26 June – 30 June 2017 **American Meteorological Society 21<sup>st</sup> Conference on Atmospheric and Oceanic Fluid Dynamics**, Portland, Oregon (talk) – “Relative Importance of Mechanisms Governing Interannual Stratosphere to Troposphere Ozone Transport”
- 22 June – 2 July 2015 **26<sup>th</sup> International Union of Geodesy and Geophysics General Assembly**, Prague, Czech Republic (two talks) – “Stratospheric sudden warmings and anomalous upward wave activity flux” and “Scale interactions and deep tropical potential vorticity intrusions during sudden stratospheric warmings”
- 15-19 June 2015 **American Meteorological Society 20<sup>th</sup> Conference on Atmospheric and Oceanic Fluid Dynamics**, Minneapolis, Minnesota (talk) – “Scale interactions and deep tropical potential vorticity intrusions during sudden stratospheric warmings”
- 17-21 May 2015 **Society for Industrial and Applied Mathematics Conference on Applications of Dynamical Systems – (co-organizer for session entitled “Bridging the Gap Between Observations and Idealized Modeling: A Comprehensive Approach to Weather and Climate Predictability)**, Snowbird, Utah (talk) – “An observational basis for sudden stratospheric warmings as bifurcations in planetary wave amplitude”
- 12-17 January 2014 **Stratosphere-troposphere Processes and their Role in Climate (SPARC) General Assembly**, Queenstown, New Zealand (poster) – “Relative roles of gravity and planetary waves in vortex preconditioning prior to sudden stratospheric warmings.”

## Computational Skills

Programming languages: Matlab, Fortran, NCL, IDL

## References

Judith Perlwitz, Ph.D.  
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