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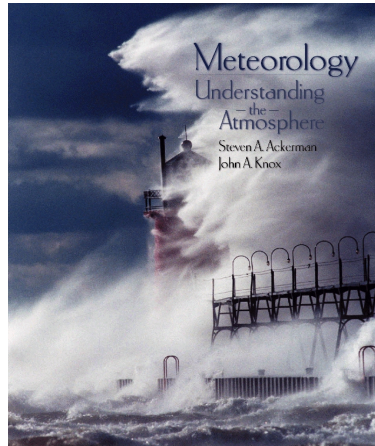
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**Steven A.
Ackerman
Prof. Atmos
and Ocean
Sciences
Director, CIMSS
University of
Wisconsin-
Madison**

Academic Education

1985-1987 Colorado State University; Ph.D. - Atmospheric Science; Advisor: Dr. Stephen K. Cox; Dissertation: "Radiative Characteristics of a Dust Laden Atmosphere"

1976-1979 Colorado State University; M.S. - Atmospheric Science

1972-1976 State University of New York - Oneonta

Awards

- May 2014: Colorado State University Alumni Award
- Jan 2014: Elected Fellow of the American Meteorological Society
- May 2011: Elected Fellow of the Wisconsin Academy of Science, Arts and Letters
- Nov 2010: Finalist in NSF International Science and Engineering Visualization Challenge
- May 2010: NASA Exceptional Public Service Medal
- June 2009: State University of New York at Oneonta: Distinguished Alumnus Award
- Jan 2009: American Meteorological Society's Teaching Excellence Award
- Summer 2004: UW-Madison Vilas Research Associate
- Spring 2003: Winner of the Society of Academic Author's Talby prize to "recognize excellence in visuals in textbooks and other learning materials."
- Summer 2003: NASA Group Achievement Award for Outstanding Teamwork on the Earth Observing System (EOS), Aqua Mission Team
- April 1999: Chancellor's Award for Distinguished Teaching
- Dec 1996: NASA Group Achievement Award: FIRE II Science and Operations Team
- April 1996: Winner of a Lilly Teaching Fellowship
- April 1995: Inducted as a Fellow in the University of Wisconsin-Madison Teaching Academy
- September 1992: NASA ERBE Program Award "For outstanding contributions to the intercomparison and validation of ERBE scanner and non-scanner results."

Research

Globally, the earth-atmosphere system is balanced by the radiative energy gained from the sun and lost through infrared emission. The geographic distribution of radiative energy is an important climate variable. A change in one climate variable inevitably results in a change in another variable. Thus, a shift in the radiation balance at the surface of the earth, top of the atmosphere or within the atmosphere can result in a sequence of complicated changes in global climate. My interests center on understanding how changes in the radiation balance affect and are affected by changes in other climate variables such as clouds, aerosols, water vapor and surface properties. These feedback mechanisms are studied using a complement of theoretical models and observations.

Books and Popular Articles

- Pryor, A., D. Kemtzt, R. Olson, and S. Ackerman, 2009: Here at Home: Learning Local Culture Pedagogy through a Cultural Tour. In A View From Practice: Folklife Resources and K-12 Schooling, published by Utah State University Press - Edited by S. Swidler and P Bowman. In Press
- Ackerman, S. A., 2008: Weather from Space, Extreme Weather, Astronomy magazine Kalmbach Publishing Co.
- Ackerman, S. A., 2007: Developing Positive Team Collaborations. *BAMS*, 627-629.
- Ackerman, S. A. and J.A. Knox, 2002: *Meteorology: Understanding the atmosphere*. Pacific Grove, CA: Brooks/Cole-Thomson Learning. xxiii, 486p. (2nd edition published in 2006)
- Ackerman, S. A. and R. Pincus, 2003: "Radiation in the Atmosphere: Observations and Applications," In *Handbook of Weather, Climate and Water*, edited by Thomas D. Potter and Bradley R. Colman. Hoboken, NJ: John Wiley and Sons, Inc.
- Pincus, R. and S. A. Ackerman, 2003: "Radiation in the Atmosphere: Foundations," In *Handbook of Weather, Climate and Water*, edited by Thomas D. Potter and Bradley R. Colman. Hoboken, NJ: John Wiley and Sons, Inc.
- Higgins, Nadia (illustrated by D. Ward and content by S. Ackerman), 2010: Weather Watchers: A children's book series on weather: "It's a Tornado!"; "It's a Thunderstorm!"; "It's Hailing!"; "It's a Tsunami!"; "It's Snowing!"; and "It's Raining!". Published by The Magic Wagon.

Recent Publications

(H Index of 35

<http://www.researcherid.com/rid/G-1640-2011>)

Lim, A. H. N., J. A. Jung, H.-L. Huang, S. A. Ackerman and J. A. Otkin, 2014: Assimilation of clear sky Atmospheric Infrared Sounder radiances in short-term regional forecasts using

community models", *J. Appl. Remote Sens.* **8**(1), 083655;
<http://dx.doi.org/10.1117/1.JRS.8.083655>

Ackerman, S. A., A. Heidinger, M. J. Foster, and B. Maddux, 2013: Satellite Regional Cloud Climatology over the Great Lakes. *Remote Sens.* **5**(12), 6223-6240;
 doi:10.3390/rs5126223 <http://www.mdpi.com/2072-4292/5/12/6223>

King, M. D., S. Platnick, W. P. Menzel, S. A. Ackerman, and P. A. Hubanks, 2013: Spatial and Temporal Distribution of Clouds Observed by MODIS Onboard the Terra and Aqua Satellites. *IEEE Transactions on Geoscience and Remote Sensing.* **51** 7 pp: 3826-3852

Stubenrauch, C. J., W. B. Rossow, S. Kinne, S. Ackerman, G. Cesana, H. Chepfer, B. Getzewich, L. Di Girolamo, A. Guignard, A. Heidinger, B. Maddux, P. Menzel, P. Minnis, C. Pearl, S. Platnick, C. Poulsen, J. Riedi, S. Sun-Mack, A. Walther, D. Winker, S. Zeng, and G. Zhao, 2013: Assessment of global cloud datasets from satellites: Project and database initiated by the GEWEX Radiation Panel. *Bull. Am. Meteor. Soc.* **94**,7.

Liu, Y., J. R. Key, S. A. Ackerman, G. Mace and Q. Zhang, 2012: Arctic Cloud Macrophysical Characteristics from CloudSat and CALIPSO. *Remote Sensing of Environment* **124**, 159–173; doi:10.1016/j.rse.2012.05.006

Baum, B. A., W. P. Menzel, R. A. Frey, D. C. Tobin, R. E. Holz, S. A. Ackerman, A. K. Heidinger and P. Yang, 2012. MODIS Cloud Top Property Refinements for Collection 6. *Jour. App. Meteor. and Clim.* **51**:6, 1145-1163

Roman, J. A., R. O. Knuteson, S. A. Ackerman, D. C. Tobin, and Henry E. Revercomb, 2012: Validation of Regional Global Climate Model (GCM) 1 Water Vapor Bias and Trends Using Precipitable Water Vapor (PWV) Observations from a Network of Global Positioning Satellite (GPS) Receivers in the U.S. Great Plains and Midwest. *Journal of Climate*, **25**, No.16, 5471–5493.

Pincus, R., S. Platnick, S. A. Ackerman, R. S. Hemler, R. J. Hofmann, 2012: Reconciling simulated and observed views of clouds: MODIS, ISCCP, and the limits of instrument simulators. *J. Climate*, **25**, 4699-4720. doi:[10.1175/JCLI-D-11-00267.1](https://doi.org/10.1175/JCLI-D-11-00267.1).

Crone, W. C., S. L. Dunwoody, R. K. Rediske, S. A. Ackerman, G. M. Zenner Peterson, and R. A. Yaros, 2011: **Informal Science Education: A Practicum for Graduate Students**. Accepted for publication in *Innovative Higher Education*

Maddux, B. C., S. A. Ackerman, and S. Platnick, 2010: **Viewing Geometry Dependencies in MODIS Cloud Products**. *J. Atmos. Oceanic Tech.* **27**, no. 9, pp 1519-1528.

Winker, D. M., J. Pelon, J. A. Coakley Jr., S. A. Ackerman, R. J. Charlson, P. R. Colarco, P. Flamant, Q. Fu, R. Hoff, C. Kittaka, T. L. Kubar, H. LeTreut, M. P. McCormick, G. Megie, L. Poole, K. Powell, C. Trepte, M. A. Vaughan, and B. A. Wielicki, 2010: **The CALIPSO Mission: A Global 3D View of Aerosols and Clouds**. *Bull. Amer. Met. Soc.*, **91**, pp 1211-1229.

Zhao, T. X.-P, S. A. Ackerman, and Wei Guo, 2010: **Dust and Smoke Detection for Multi-Channel Imagers**, *Remote Sens.* 2010, 2(10), 2347-2368; doi:10.3390/rs2102347

Von P. Walden, V. P., R. L. Tanamachi, P. M. Rowe, H. E. Revercomb, D. C. Tobin, and S. A. Ackerman, 2010: **Improvements in the data quality of the Interferometric Monitor of Greenhouse Gases (IMG)**. *Applied Optics*, **49**, Issue 3, 520-528.

Foster, M. J., S. A. Ackerman, A. K. Heidinger, and B. C. Maddux, 2010: **Global Cloudiness [in "State of the Climate in 2009"]**. *Bull. Amer. Met. Soc.*, **91**, S34-S35.

Liu, Y., S. A. Ackerman, B. C. Maddux, J. R. Key, and R. A. Frey, 2010: **Errors in Cloud Detection Over the Arctic and Implications for Observing Feedback Mechanisms**, *J. Climate*, **23**, Issue 6, 1894-1907.

Schmit, T. J., L. Jun, S. A. Ackerman, and J. J. Gurka, 2009: **High-Spectral and High-spectral Temporal Resolution Infrared Measurements from Geostationary Orbit**. *J. Atmos. Oceanic Tech.*, **26**, 2273-2292.

Wu, D. L., S. A. Ackerman, R. Davies, D. J. Diner, M. J. Garay, B.H. Kahn, B. C. Maddux, C. M. Moroney, G. L. Stephens, J. P. Veefkind, and M. A. Vaughn, 2009: **Vertical distributions and relationships of cloud occurrence frequency as observed by MISR, AIRS, MODIS, OML, CALIPSO, and CloudSat**. *Geophys. Res. Lett.*, **36**,
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Cheetam, J., S. A. Ackerman, and K. Christoph, 2009: **Podcasting: A Stepping Stone to Pedagogical Innovation**. *Educause Quarterly*, the on-line article can be found at http://engage.doit.wisc.edu/edu_podcasting/.

Sieglauff, J. M., T. J. Schmit, W. P. Menzel and S. A. Ackerman, 2009: **Inferring Convective Weather Characteristics with Geostationary High-spectral Resolution IR Window Measurements: A Look into the Future**, *J.*

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Ackerman, S. A., A. J. Schreiner, T. J. Schmit, H. M. Woolf, J. Li, and M. Pavolonis, 2008: [Using the GOES Sounder to Monitor Upper-level SO₂ from Volcanic Eruptions](#). *Jour. Geo. Res.* . Volume 113, 2008, Doi:10.1029/2007JD009622

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Brunner, J. C., S. A. Ackerman, A. S. Bachmeier, and R. M. Rabin, 2007: **A Quantitative Analysis of the Enhanced-V Feature in Relation to Severe Weather**. *Wea. Forecasting*, **22**, No. 4, 853-872.

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Holz, R., S. A. Ackerman, P. Antonelli, F. Nagle, R. O. Knuteson, M. McGill, D. L. Hlavka, and W. D. Hart, 2006: **An Improvement to the High Spectral Resolution CO₂ Slicing Cloud Top Altitude Retrieval**. *J.Atmos. Oceanic*

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Knox, J. A. and S. A. Ackerman, 2005: **What do introductory meteorology students want to learn?**. *Bull. Amer. Meteor. Soc.*, **86**, Issue 10, 1431-1435.

King, M. D., S. Platnick, P. Yang, G. T. Arnold, M. A. Gray, J. C. Riedi, S. A. Ackerman, and K. Liou, 2004: **Remote sensing of liquid water and ice cloud optical thickness and effective radius in the Arctic: Application of airborne multispectral MAS data**. *J. Atmos. Oceanic Technol.*, **21**, Issue 6, 857-875.

Liu, Y., J. R. Key, R. A. Frey, S. A. Ackerman, and W. P. Menzel, 2004: **Nighttime polar cloud detection with MODIS**. *Remote Sens. Environ.*, Volume 92, 181-194. Call Number: Reprint # 3815

Huang, H., P. Yang, H. Wei, B. A. Baum, Y. Hu, P. Antonelli, and S. A. Ackerman, 2004: **Inference of ice cloud properties from high spectral resolution infrared observations**. *IEEE Trans. Geosci. Remote Sens.*, **42**, Issue 4, 842-853. Call Number: Reprint # 3923

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Moeller, C. C., H. E. Revercomb, S. A. Ackerman, W. P. Menzel, and R. O. Knuteson, 2003 **Evaluation of MODIS thermal IR and L1B radiances during SAFARI 2000.** *J. Geophys. Res.*, Volume 108, (SAF 30-1)-(SAF 30-12).

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