

CURRICULUM VITAE

STEVEN D. MILLER

Cooperative Institute for Research in the Atmosphere
Colorado State University
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Last Updated: 11 September 2014

EDUCATION

Doctorate of Philosophy, 2000, Colorado State University
College of Engineering, Department of Atmospheric Science
Specialization: Atmospheric Science--Radiation Theory and Remote Sensing

Masters of Science, 1997, Colorado State University
College of Engineering, Department of Atmospheric Science
Specialization: Atmospheric Science--Radiation Theory and Remote Sensing

Bachelors of Science, 1995, University of California at San Diego
Eleanor Roosevelt College
Specialization: Electrical and Computer Engineering—Systems and Control Theory

DISSERTATION

Miller, S. D., 2000: A Multi-Sensor Approach to the Retrieval and Model Validation of Global Cloudiness. Atmospheric Science Blue Book #692, Colorado State University, Ft. Collins, CO 80523-1371.

THESIS

Miller, S. D. and G. L. Stephens, 1997: Multiple Scattering Effects in the Lidar Pulse Stretching Problem. Atmospheric Science Blue Book #642, Colorado State University, Ft. Collins, CO 80523-1371.

EMPLOYMENT HISTORY

2007-Present: Deputy Director and Research Scientist (RS-III 2007-2011, Sr. RS 2012),
Cooperative Institute for Research in the Atmosphere (CIRA), Colorado State University, Fort
Collins, CO

2007-Present: Part-time Contracting Scientist to SAIC, Innovative Employee Solutions, San
Diego, CA

1999-2000, 2011-Present: Part-Time Contracting Scientist to STC-METSAT, Fort Collins, CO

2000-2007 Satellite Meteorologist (NP-III/IV), Naval Research Laboratory, Marine Meteorology Division, Monterey, CA

1995-2000 Graduate Research Assistant, Atmospheric Science Dep., Colorado State University

HONORS & AWARDS

2012 NASA Group Achievement Award—Suomi NPP VIIRS Cal/Val Team

2012 Promotion to Senior Research Scientist, Cooperative Institute for Research in the Atmosphere, Colorado State University, Fort Collins, CO

2009 Alan Berman Research Paper Publication Award: “Near Real-Time Applications of CloudSat Data”

2007 Len Curtis European Award; Council of The Remote Sensing and Photogrammetry Society, Sponsored by Taylor & Francis.

2007 NOAA-David Johnson Award, National Space Club, Washington D.C.

2006 Promotion to Civil Servant Level-4 (Senior Scientist), Naval Research Laboratory, Monterey, CA

2006 NASA Group Achievement Award for Tropical Cloud Systems and Processes intensive airborne science field campaign, *Naval Research Laboratory, Monterey, CA*

2005 Alan Berman Research Paper Publication Award: “Detection of a Bioluminescent Milky Sea from Space”

2003 NASA Group Achievement Award for MODIS Near Real-Time Processing Effort (NRTPE), *Naval Research Laboratory, Monterey, CA*

2003 Performance Contribution Award, *Naval Research Laboratory, Monterey, CA*

2002 Technology Transfer Award for transition of Satellite FOCUS page to FNMOC, *Naval Research Laboratory, Monterey, CA*

2002 Special Act Award for SeaWiFS processing development, *Naval Research Laboratory, Monterey, CA*

2002 Plaque from Aviation Week for providing cover image and material contributions to feature article, *Naval Research Laboratory, Monterey, CA*

2001 “On the Spot” Research Award for contributions to OCND product, *Naval Research Laboratory, Monterey, CA*

2000 Outstanding Graduate Research Assistant of the Year Award, *Colorado State University, Dept. of Engineering, Fort Collins, CO*

2000 Sigma-Xi Chapter of Colorado State University Award for Outstanding Science/Engineering Poster, *Colorado State University, Graduate Research and Creativity Symposium, Fort Collins, CO*

1999-2000 NASA Student Fellowship Award #NGT5-50007-0002, *Colorado State University, Fort Collins, CO*

1990 Class Valedictorian, *Stephen W. Kearny High School, San Diego, CA*

MAJOR GRANTS & CONTRACTS (as PI or Co-PI)

Currently oversee/PI ~\$3.5M in expense activity at CIRA (figure includes NESDIS Earth Applications Team, GIMPAP and GOES-R Risk Reduction bundled projects which are led technically by various NOAA/NESDIS Technical PIs and CIRA Co-Is).

SERVICE

2012-Present: *Associate Editor; Journal of Atmospheric and Oceanic Technology (JTECH-D; ISSN 0739-0572)*, 2012-Present

2014: S-NPP Workshop Planning Committee (SPoRT, Huntsville)

2014: Science Steering Committee, GOES-Next.

2013: Conference Session Chair AMS/EUMETSAT Vienna.

2009: Proposal Review Panelist: GOES-R Risk Reduction

2009: *Conference Co-Chair; American Meteorological Society Satellite Meteorology and Oceanography Conference; Annapolis, MD.*

2009: Algorithm Reviewer: GOES-R AWG Cloud Product ATBD.

2008: Algorithm Reviewer: GOES-R Cloud and Moisture Imagery Product ATBD.

2007: Conference Session Chair AMS/EUMETSAT.

2006: Conference Session Chair AMS New Orleans.

PEER-REVIEWED PUBLICATIONS

2014

Miller, S. D., Y. J. Noh, and A. K. Heidinger 2014: Liquid-topped mixed phase cloud detection by way of near-infrared multispectral reflectance ratios. *J. Geophys. Res.*, **119**(13), 8425-8267, doi:10.1002/2013JD021262. **NOTE: JGR Cover Article.**

Hillger, D., C. Seaman, C. Liang, **S. D. Miller**, D. Lindsey, and T. Kopp 2014: Suomi NPP VIIRS Imagery evaluation. *J. Geophys. Res.*, **119**, 6440-6455, doi:10.1002/2013JD021170.

Miller, S. D., B. G. Brown, P. A. Kucera, C. Weeks, R. Bullock, J. Forsythe, P. T. Partain, A. S. Jones, C. Wolff, and D. Johnson, 2014: Toward Three-Dimensional Cloud Verification via the NASA A-Train and Model Evaluation Tools. *J. Appl. Meteorology and Climatology*, 53(9), 2181-2195.

Weaver, J. F., L. C. Harkabus, J. Braun, **S. D. Miller**, R. Cox, J. Griffith, and R. J. Mazur, 2014: An overview of a demographic study of United States Emergency Managers. *Bull. Amer. Meteor. Soc., Nowcast*, **95**(2), 199-203, doi:10.1175/BAMS-D-12-00183.1.

Liang, C. K., B. I. Hauss, S. Mills, and **S. D. Miller**, 2014: Improved VIIRS Day/Night Band imagery with Near Constant Contrast. *IEEE TGRS*, **52**(11), 6964-6971, doi:10.1109/TGRS.2014.2306132.

Yue, J., S. D. Miller, L. Hoffmann, and W. C. Straka, III, 2014: Stratospheric and Mesospheric concentric gravity waves over Tropical Cyclone Mahasen: joint AIRS and VIIRS satellite observations. *J. Atmos. Solar-Terr. Phys.*, doi:10.1016/j.jastp.2014.07.003.

Miller, S. D., J. Forsythe, P. T. Partain, J. Haynes, R. Bankert, M. Sengupta, C. Mitrescu, J. D. Hawkins, and T. H. Vonder Haar, 2014: Estimating three-dimensional cloud structure from statistically blended active and passive sensor observations. *J. Appl. Meteor. Clim.*, **53**(2), 437-455.

2013

Walther, A., A. K. Heidinger, and **S. Miller**, 2013: The expected performance of cloud optical and microphysical properties derived from Suomi NPP VIIRS day/night band lunar reflectance, *J. Geophys. Res. Atmos.*, 118, 13,230–13, 240.

Miller, S. D., W. Straka, III, S. P. Mills, C. D. Elvidge, T. F. Lee, J. Solbrig, A. Walther, A. K. Heidinger, and S. C. Weiss., 2013: Illuminating the capabilities of the Suomi NPP VIIRS Day/Night Band. *Rem. Sens.*, **5**, 6717-6766; doi:10.3390/rs5126717.

- Miller, S. D.**, W. C. Straka, III, A. S. Bachmeier, T. J. Schmit, P. T. Partain, and Y.-J. Noh, 2013: Earth-viewing satellite perspectives on the Chelyabinsk meteor event. *Proc. Nat. Acad. Sci.*, **110**(45), 18092-18097.
- Solbrig, J. E., T. F. Lee, and **S. D. Miller**, 2013: Advances in remote sensing: imaging the Earth by moonlight, *Trans. EOS*, **94**(40), 349-350.
- Kuciauskas, A. J. Solbrig, T. Lee, J. Hawkins, **S. D. Miller**, M. Surratt, K. Richardson, R. Bankert, and J. Kent, 2013: New satellite meteorology technology unveiled, *Bull. Amer. Meteor. Soc.*, **94**, 1824-1825.
- Seaman, C., and **S. D. Miller**, 2013: Aurora motion VIIRS Day/Night Band, *Bull. Amer. Meteor. Soc., Nowcast*, **94**(10), 1491-1493; doi: 10.1175/BAMS-D-12-00221.1.
- Johnson, R. S., J. Zhang, E. J. Hyer, **S. D. Miller**, and J. S. Reid, 2013: Preliminary investigations toward nighttime aerosol optical depth retrievals from the VIIRS Day/Night Band, *Atmos. Meas. Techniques*, **6**, 1245-1255. DOI:10.5194/amt-6-1245-2013
- Schueler, C., T. F. Lee, and **S. D. Miller**, 2013: VIIRS constant spatial-resolution advantages. *Int. J. Rem. Sens.*, **34**(16), 5761-5777.
- Hillger, D., T. Kopp, T. F. Lee, D. Lindsey, C. Seaman, **S. D. Miller**, J. Solbrig, S. Q. Kidder, S. Bachmeier, T. Jasmin, and T. Rink, 2013: First-light imagery from Suomi NPP VIIRS, *Bull. Amer. Meteor. Soc.* **94**(7), 1019-1029, DOI:10.1175/BAMS-D-12-00097.1. **NOTE: BAMS Cover Article.**
- 2012**
- Miller, S. D.**, S. P. Mills, C. D. Elvidge, D. T. Lindsey, T. F. Lee, and J. D. Hawkins, 2012: Suomi satellite brings to light a unique frontier of environmental imaging capabilities. *Proc. Nat. Acad. Sci.*, **109**(39), 15706-15711.
- Miller, S. D.**, C. Schmidt, T. Schmit, and D. Hillger, 2012: A case for natural colour imagery from geostationary satellites, and an approximation for the GOES-R ABI, *Int. J. Rem. Sens.*, **33**(13), 3999-4028.
- Miller, S. D.**, C. Combs, S. Q. Kidder, and T. F. Lee, 2012: Assessing global and seasonal lunar availability for nighttime low-light visible remote sensing applications, *JTECH*, **29**(4), 538-557.
- Chand, D., M. Wang, R. Wood, S. Ghan, M. Ovchinnikov, P. Rasch, **S. Miller**, B. Schichtel, and T. Moore, 2012: Aerosol optical depth enhancement in partly cloudy conditions. *J. Geophys. Res.*, **117**, D17207, DOI:10.1029/2012JD017894.
- Fletcher, S. J., **et al.**, 2012: Assimilating MODIS and AMSR-E Snow Observations in a Snow Evolution Model, *Journal of Hydrometeorology*, **13**, 1475-1492, DOI:10.1175/JHM-D-11-082.1.

Goodman, S. J., J. Gurka, R. Reynolds, M. DeMaria, T. Schmit, W. Feltz, J. Gerth, **S. Miller**, R. Brummer, G. Jedlovec, C. Siewert, A. Mostek, and B. Reed, 2012: The GOES-R Proving Ground: accelerating user readiness for the next generation geostationary environmental satellite system. *Bull. Amer. Meteorol. Soc.*, **13**(5), 1475-1492.

2011

Hillger, D., L. Grasso, **S. D. Miller**, R. Brummer, and R. DeMaria, 2011: Synthetic GOES-R Advanced Baseline Imager true color imagery. *J. Appl. Rem. Sens.*, **5**, 053520, DOI:10.1117/1.3576112.

Bankert, R. L., J. E. Solbrig, T. F. Lee, and **S. D. Miller**, 2011: Automated lightning flash detection in nighttime visible satellite data. *Weather and Forecasting*, **26**, 399-408.

2010

Lee, T. F., C. Mitrescu, R. Bankert, C. A. Wolff, and **S. D. Miller**, 2010: Evaluating icing nowcasts using CloudSat. *Elec. J. Oper. Meteor.*, Nat. Wea. Assoc., 2010-EJ2.

Lee, T. F., C. Nelson, P. Dills, L.-P. Riishojgaard, A. Jones, L. Li, **S. Miller**, L. E. Flynn, G. Jedlovec, W. McCarty, C. Hoffman, and G. McWilliams, 2010: NPOESS: next generation operational global earth observations. *Bull. Amer. Meteor. Soc.*, **91** (6), 727-740.

Lindsey, D., **S. D. Miller**, and L. Grasso, 2010: The impacts of the 9 April 2009 dust and smoke on convection. *Bull. Amer. Meteor. Soc., Map Room*, **91** (8), 991-995.

Schumacher, R. S., D. T. Lindsey, A. B. Schumacher, J. Braun, **S. D. Miller**, and J. L. Demuth, 2010: Multidisciplinary analysis of an unusual tornado: Meteorology, climatology and the communication and interpretation of warnings. *Weather and Forecasting*, **25** (5), 1412-1429.

Mitrescu, C., **S. D. Miller**, J. Haynes, T. S. L'Ecuyer, and F. J. Turk, 2010: CloudSat precipitation profiling algorithm: model description, *J. Appl. Meteor. Climatol.*, **49**, 991-1003, doi:10.1175/2009JAMC2181.1.

2009

Miller, S. D., and R. E. Turner, 2009: A dynamic lunar spectral irradiance dataset for NPOESS/VIIRS Day/Night Band nighttime environmental applications, *IEEE Transactions on Geoscience and Remote Sensing*, **47**(7), 2316-2329, doi:10.1109/TGRS.2009.2012696.

Turk, F. J., **S. D. Miller**, and C. Castello, 2009: A global cloud layer for virtual globes. *Int. J. Rem. Sens.*, **31**(7), 1898-1914.

Sorooshian, A., L. T. Padro, A. Nenes, G. Feingold, A. McComiskey, S. P. Hersey, H. Gates, H. H. Jonsson, **S. D. Miller**, G. L. Stephens, R. C. Flagan, and J. H. Seinfeld. 2009. On the link

between ocean biota emissions, aerosol, and maritime clouds: Airborne, ground, and satellite measurements off the coast of California. *Global Biogeochemical Cycles*, **23**.

Walker, A. L., M. Liu, **S. D. Miller**, K. A. Richardson, and D. L. Westphal, 2009: Development of a dust source database for mesoscale forecasting in southwest Asia, *J. Geophys. Res.*, **114**, D18207, doi:10.1029/2008JD011541.

Bankert, R., C. Mitrescu, **S. D. Miller**, and R. H. Wade, 2009: Comparison of GOES cloud classification algorithms employing explicit and implicit physics. *Journal of Applied Meteorology and Climatology*, **48**(7), 1411-1421.

Haynes, J. M., T. S. L'Ecuyer, G. L. Stephens, **S. D. Miller**, C. Mitrescu, N. B. Wood, and S. Tanelli, 2009: Rainfall retrieval over the ocean with spaceborne W-band radar, *J. Geophys. Res.*, **114**, D00A22, doi:10.1029/2008JD009973.

2008

Miller, S. D., A. P. Kuciauskas, M. Liu, Q. Ji, J. S. Reid, D. W. Breed, A. L. Walker, and A. A. Mandoos, 2008: Haboob dust storms of the southern Arabian Peninsula, *J. Geophys. Res.*, **113**, D01202, doi:10.1029/2007JD008550.

Mitrescu, C., **S. D. Miller**, T. L'Ecuyer, J. Hawkins, J. Turk, and P. T. Partain, 2008: Near real-time applications of CloudSat data. *J. Appl. Meteor.*, **47**, 1982-1994, doi: 10.1175/2007JAMC1794.1.

Donovan, M., E. R. Williams, C. Kessinger, G. Blackburn, R. L. Bankert, and **S. D. Miller**, 2008: The identification and verification of hazardous convective cells over oceans using visible and infrared satellite observations, *J. Appl. Meteor.*, **47**(1), 164—184, doi:10.1175/2007JAMC1471.1.

Zhang, J., J. S. Reid, **S. D. Miller**, and F. J. Turk, 2008: Strategy for studying nocturnal aerosol optical depth using artificial lights. *Int. J. Rem. Sens.*, **29**:16, 4599—4613.

2007

Lee, T. F., **S. D. Miller**, F. J. Turk, J. D. Hawkins, S. Wang, P. Dills, G. McWilliams, C. Hoffman, G. Mineart, Z. Jelaneck, 2007: NPOESS Online Satellite Training for Users. *Bull. Amer. Meteor. Soc.*, **88**, 13-16.

Liu, M., D. L. Westphal, A. L. Walker, T. R. Holt, K. A. Richardson, and **S. D. Miller**, 2007: COAMPS real-time dust storm forecasting during Operation Iraqi Freedom. *J. Wea. and Forecasting*, **22**, 192-206.

2006

Miller, S. D., S. H. D. Haddock, C. Elvidge, and T.F. Lee, 2006: 20,000 leagues *over* the seas: the first satellite observations of a bioluminescent milky sea, *Int. J. Rem. Sensing*, **27**, 5131-5143. **NOTE: Recipient of the LEN CURTIS EUROPEAN AWARD**

Miller, S. D., J. D. Hawkins, J. Kent, F. J. Turk, T. F. Lee, A. P. Kuciauskas, K. Richardson, R. Wade, and C. Hoffman, 2006: NexSat: Previewing NPOESS/VIIRS Imagery Capabilities, *Bull. Amer. Meteor. Soc.*, **87**(4), 433-446, doi:10.1175/BAMS-87-4-433. **NOTE: BAMS Cover Article.**

Miller, S. D., J. D. Hawkins, T. F. Lee, F. J. Turk, and K. Richardson, 2006: MODIS Views of Operation Iraqi Freedom in Collage, *Int. J. Rem. Sens.*, **27**(7), 1279-1284, doi:10.1080/01431160500383673. **NOTE: IJRS Cover Article.**

Miller, S. D., J. D. Hawkins, T. F. Lee, F. J. Turk, K. Richardson, A. P. Kuciauskas, J. Kent, R. Wade, C. E. Skupniewicz, J. Cornelius, J. O'Neal, P. Haggerty, K. Sprietzer, G. Legg, J. Henegar, and B. Seaton, 2006: MODIS Provides a Satellite Focus on Operation Iraqi Freedom, *Int. J. Rem. Sensing*, **27**(7), 1285-1296, doi:10.1080/01431160500383772. **NOTE: IJRS Cover Article.**

Lee, T. F., **S. D. Miller**, C. Schueler, and S. Miller, 2006: NASA/MODIS Previews NPOESS/VIIRS Capabilities, *Wea. and Forecasting*, **21**, 649-655.

Lee, T. F., **S. D. Miller**, F. J. Turk, C. Schueler, R. Julian, S. Deyo, P. Dills, and S. Wang, 2006: The NPOESS/VIIRS day/night visible sensor, *Bull. Amer. Meteor. Soc.*, **87**(2), 191-199, doi:10.1175/BAMS-87-2-191.

Nealson, K. H., and J. W. Hastings, 2006: Quorum sensing on a global scale: massive numbers of bioluminescent bacteria make Milky Seas. *Appl. Env. Microbiol.*, **72**(4), 2295-2297, doi:10.1128/AEM.72.4.2295-2297.2006. **NOTE: AEM Cover Article (Supplied art)**

2005

Miller, S. D., S. H. D. Haddock, C. Elvidge, and T.F. Lee, 2005: Detection of a bioluminescent milky sea from space, *Proc. Nat. Acad. Sci.*, **102**(40), 14181-14184, doi:10.1073/pnas.0507253102. **NOTE: Recipient of the ALAN BERMAN PUBLICATION AWARD**

Miller, S. D., T. F. Lee, and R. Fennimore, July 2005: Satellite-based daytime imagery techniques for snow cover and cloud delineation, *J. Appl. Meteorol.*, **44**(7), 987-997.

Mitrescu, C., J. M. Haynes, G. L. Stephens, **S. D. Miller**, G. M. Heymsfield, and M. J. McGill, 2005: Cirrus cloud optical, microphysical, and radiative properties observed during the CRYSTAL-FACE experiment: I. A lidar-radar retrieval system, *J. Geophys. Res.*, **110**, D09208, doi:10.1029/2004JD2005605.

Turk, F. J., and **S. D. Miller**, 2005: Towards improved characterization of remotely sensed precipitation regimes with MODIS/AMSR-E blended data techniques, *IEEE Trans. Geoscience Rem. Sens.*, **43**, 1059—1069.

2004

(None—*Focus was placed entirely on development and implementation of real-time satellite applications in support of U.S. Navy carrier groups and Coalition forces in-theater operations during Operation Enduring Freedom and Operation Iraqi Freedom; post-9/11 conflicts.*
NOTE: *Received NASA Group Achievement Award.*)

2003

Miller, S. D., 2003: A consolidated technique for enhancing desert dust storms with MODIS, *Geophys. Res. Lett.*, **30**, 2071-2074.

2002

Stephens, G. L. *et al.*, 2002: The CloudSat mission and the A-Train: A new dimension of space-based observations of clouds and precipitation. *Bull. Amer. Meteor. Soc.*, **83**, No. 12, 1771-1790.

Platt, C.M.R., S. A. Young, R. T. Austin, G. R. Patterson, D. L. Mitchell, and **S. D. Miller**, 2002: LIRAD observations of tropical cirrus clouds in MCTEX. Part I: Optical properties and detection of small particles in cold cirrus. *J. Atmos. Sci.*, **59**, 3145-3162.

2001

Miller, S. D., 2001: Physical decoupling of the GOES daytime 3.9-um channel thermal emission and solar reflection components using total solar eclipse data. *Int. Journal of Remote Sensing*, **22**, No. 1 9-34.

Miller, S. D., and G. L. Stephens, 2001: CloudSat instrument requirements as determined from ECMWF forecasts of global cloudiness. *J. Geophys. Res.*, **106**, D16, 17713-17733.

Miller, S. D., G. L. Stephens, and R. T. Austin, 2001: GOES 10 cloud property retrievals in the context of vertically varying microphysics. *J. Geophys. Res.*, **106**, D16, 17981-17995.

2000

Miller, S. D., G. L. Stephens, C. K. Drummond, A. K. Heidinger, and P. T. Partain, 2000: A multisensor diagnostic cloud property retrieval scheme. *J. Geophys. Res.*, **105**, No. D15, 19955-19971.

Stephens, G. L., R. F. McCoy, R. McCoy, P. Gabriel, P. T. Partain, **S. D. Miller**, and S. Love, 2000: A multipurpose scanning spectral polarimeter (SSP): Instrument description and sample results. *J. Atmos. and Oceanic Tech*, **17**, 616-627.

Stephens, G. L., R. G. Ellington, J. Vitko Jr., W. Bolton, T. Tooman, F. P. J. Valero, P. Minnis, P. Pilewskie, G. S. Phipps, S. Sekelsky, J. R. Carswell, **S. D. Miller**, A. Benedetti, R. B. McCoy, R. F. McCoy, Jr., A Lederbuhr, R. Bambha, 2000: The Department of Energy's Atmospheric Radiation Measurement (ARM) Unmanned Aerospace Vehicle (UAV) Program. *B. Amer. Meteor. Soc.*, **81**, No. 12, 2915-2937

1999

Miller, S. D., G. L. Stephens, and A.C.M. Beljaars 1999: A validation survey of the ECMWF cloud prognostic scheme using LITE. *Geophys.Res. Lett.*, **26**, No. 10, 1417-1420.

Miller, S. D. and G. L. Stephens, 1999: Multiple Scattering Effects in the Lidar Pulse Stretching Problem. *J. Geophys. Res.*, **104**, No. D18, 22205-22219.

Platt, C. M. R., D. M. Winker, M. A. Vaughan, and **S. D. Miller**, 1999: Backscatter-to-extinction ratios in the top layers of the tropical mesoscale convective systems and in isolated cirrus from LITE observations. *J. Appl. Meteor.*, **38**(9), 1330-1345.

TECHNICAL REPORTS / MEMORANDUMS / ATBDs / ETC

Hillger, D.W., and S.D. Miller, 2011: GOES-R Advanced Baseline Imager (ABI) Algorithm Theoretical Basis Document (ATBD) For Natural (aka True) Color Imagery Product (NCIP), NOAA/NESDIS/STAR, (April), 28 pp.

Reid et al., 2005: A Summary of First Year Activities of the United Arab Emirates Unified Aerosol Experiment: UAE2. NRL/MR/7534--05-8899

Miller, S. D., 2002: SeaWiFS True Color, Vegetation, and Dust Enhancement Processing at NRL Monterey, NRL Report NRL/FR/7540—02-2, 22 pp.

Miller, S. D., 2000: Update on NRL-MRY OCND Cloud Top Mapping Efforts: NRL Internal Memorandum.

Stephens, G. L., and S. D. Miller, 1998: Assessing the impact of remote sensing data on the cloudiness predictions in short-term forecasts: Technical Report, Colorado State University.

Stephens, G. L., and S. D. Miller, 1999: Assessing the impact of remote sensing data on the cloudiness predictions in short-term forecasts: Technical Report, Colorado State University.

BOOKS / CHAPTERS / NEWS LETTERS / ETC

Miller, S. D., 2013: Suomi NPP VIIRS Day/Night Band: A New Dawn to Nocturnal Remote Sensing. Joint Polar Satellite System Science Seminar Annual Digest. Section 10, 68-78.

Miller, S. D., A. K. Heidinger, and M. Sengupta, 2013: Physically Based Satellite Methods, Submitted to Elsevier (Ch. 3 of *Solar Energy Forecasting*, J. Kleissl, Editor), ISBN 9780123971777, 504 pp.

Turk, J., 2008: NRL partners with Google for live weather data on Google Earth. *NRL Labstracts*, 10 March.

Fromm, M. and S. D. Miller, 2007: Pyrocumulonimbus and climate change. Integrated Land Ecosystem-Atmosphere Processes Study (iLEAPS) Newsletter, No. 4, 24-25, June 2007.

Miller, S. D. and S. Haddock, 2006: Satellites capture first glimpse of 'milky-sea' glowing water phenomenon. SPIE Newsroom, DOI: 10.1117/2.1200601.0093.

Marris, E., 2005: 2005 Gallery News, "First Glimpse; Milky Sea." *Nature*, 438, 1064-1067.

Miller, S. D., 2003: Satellite Surveillance of Desert Dust Storms. *NRL Review*, 69-77.

Miller, S. D., 2003: A "Satellite Focus" for the War on Terror. *NRL Review*, 103-105.

SELECTED CONFERENCE PROCEEDINGS

Mills, S., and S. D. Miller, 2014: VIIRS Day-Night Band (DNB) Calibration Methods for Improved Uniformity. Proc. SPIE, San Diego, August 2014.

Puschell, J. J., D. Johnson, and S. D. Miller, 2014: Persistent Observations of the Arctic from Highly Elliptical Orbits Using Multispectral, Wide Field of View Day-Night Imagers. Proc. SPIE, San Diego, August 2014.

Miller, S. D., D. Chand, C. L. Combs, M. Sengupta, and A. K. Heidinger, 2011: Toward Evaluating Short-Term Predictions of Solar Irradiance at the Surface: Persistence, Satellite-Based Trajectory and Numerical Weather Prediction Models. Proc. ASES, 151.

Miller, S. D., S. H. D. Haddock, C. D. Elvidge, and T. F. Lee, 2007: Milky Seas: A New Science Frontier for Nighttime Visible-Band Satellite Remote Sensing. Joint EUMETSAT Meteorological Satellite Conference and 15th Satellite Meteorology & Oceanography Conference of the American Meteorological Society, Amsterdam, The Netherlands, September 24- 28.

Miller, S. D., F. J. Turk, T. F. Lee, J. D. Hawkins, C. S. Velden, C. C. Schmidt, E. M. Prins, and S. H. D. Haddock, 2006: The Origin of Sensors: Evolutionary Considerations for Next-Generation Environmental Satellite Systems, 14th Conf. Sat. Meteor. and Ocean., **10.1**, Amer. Meteor. Soc., Atlanta, Feb 3-6.

Miller, S. D., T. F. Lee, F. J. Turk, A. P. Kuciauskas, and J. D. Hawkins, Shedding New Light on Nocturnal Monitoring of the Environment with the VIIRS Day/Night Band, *Proc. of SPIE*, **5890**, San Diego, CA, July 31-Aug 4, 2005, 58900W.

Miller, S. D., J. D. Hawkins, F. Joseph Turk, T. F. Lee, and J. Kent, 2004: Demonstrating NPOESS/VIIRS Imaging Capabilities Over the Continental United States with MODIS, *Proc. of the 13th Conference on Satellite Meteorology and Oceanography*, P1.21, American Meteorological Society, Norfolk, VA, September 2004.

Miller, S. D., 2003: An Improved Land/Ocean Dust Enhancement Applicable to MODIS. *Proc. of the 12th Conference on Satellite Meteorology and Oceanography*, CD-ROM 3.2, American Meteorological Society, Long Beach, CA.

Miller, S. D. and T. F. Lee, 2001: Desert Dust Storms as Detected by MeteoSat and SeaWiFS Multispectral Imagery. *Proc. of the 11th Conference on Satellite Meteorology and Oceanography*, 43—46, Poster 1.11, American Meteorological Society, Madison, WI.

Miller, S. D., 2001: Physical Decoupling of the GOES 3.9- μm Thermal Emission and Solar Reflection Components Using Total Solar Eclipse Data. *Proc. of the 11th Conference on Satellite Meteorology and Oceanography*, 446—449, Poster 4.5, American Meteorological Society, Madison, WI.

SELECTED ORAL PRESENTATIONS

Miller, S. D., W. Straka, and D. Pettit, 2014: Man in the Loop—Benefits of the ISS Platform for Characterizing Low-Light Visible Observations from the Suomi NPP Day/Night Band. Oral Presentation, *30th AMS Conf. Env. Inf. Proc. Tech.*, Atlanta, GA. Abstract 241957.

Miller, S. D., 2013: *Light Amidst the Shadows*: a New Paradigm of Nocturnal Environmental Application Capabilities from the Suomi NPP VIIRS Day/Night Band, Joint AMS/EUMETSAT Satellite Conference, Vienna.

Miller, S.D., 2013: A Dynamic Enhancement Background Reduction Algorithm (DEBRA) Applied to MSG/SEVIRI Observations of Dust Storms, Joint AMS/EUMETSAT Satellite Conference, Vienna.

COMMITTEES AND STEERING GROUPS

2011-Present VIIRS Imagery Cal/Val Team

2011-Present VIIRS Cloud Cal/Val Team

2011-2012 ASES Solar Energy Committee

2010 Co-chair for 2010 AMS Satellite Meteorology/Oceanography conference, Annapolis, MD

2008-2011 Member, AMS STAC Committee on Satellite Meteorology and Oceanography

2009-Present: Member, GOES-R Algorithm Working Group (AWG) Independent Review Team

2000-Present: Member, CloudSat Applications Advisory Group

2002-2008: Member, VIIRS Operational Algorithm Team (VOAT)

INVENTIONS/PATENTS

Miller, S. D., “Dynamic Enhancement Background Reduction Algorithm (DEBRA)”, Patent Application Submitted, January 2013.

Miller, S. D.: “Method and Apparatus for Three-Dimensional Blending,” NRL Provisional Patent submitted, 2006.

Miller, S. D.: “Significant Dust Enhancement Over Land and Ocean,” NRL Provisional Patent Awarded, February 2003.

PROFESSIONAL SOCIETES

American Meteorological Society

American Geophysical Union