

January 30, 2020

## Albin J. Gasiewski, Ph.D.

**Professor of Electrical and Computer Engineering  
Director, NOAA-CU Center for Environmental Technology  
University of Colorado at Boulder**

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### EDUCATIONAL BACKGROUND

<u>Degree</u>	<u>Year</u>	<u>University</u>	<u>Field</u>
Ph.D.	1988	Massachusetts Institute of Technology	Electrical Engineering
M.S.	1983	Case Western Reserve University	Electrical Engineering
B.S.	1983	Case Western Reserve University	Electrical Engineering
B.S.	1983	Case Western Reserve University	Mathematics

### EMPLOYMENT HISTORY

<u>Title</u>	<u>Organization</u>	<u>Years</u>
Professor	Department of Electrical and Computer Engineering, University of Colorado at Boulder	1/06-present
Chief	NOAA Environmental Technology Laboratory, Division of Microwave Systems Development, Boulder, CO	10/01-1/06
OAR Program Coordinator	NOAA Office of Oceanic and Atmospheric Research, Washington, DC	2/01-6/01
Senior Physicist	NOAA Environmental Technology Laboratory, Boulder, CO	1/00-9/01
Microwave Radiometry Group Leader	NOAA Environmental Technology Laboratory, Boulder, CO	8/98-9/01
Adjunct Professor	Department of Electrical and Computer Engineering, University of Colorado, Boulder, CO	7/98-12/05
Electronics Engineer	NOAA Environmental Technology Laboratory, Boulder, CO	7/97-12/99
Associate Adjunct Professor	School of Electrical and Computer Engineering, Georgia Institute of Technology	7/97-present
Associate Professor/Tenure	School of Electrical and Computer Engineering, Georgia Institute of Technology	7/95-6/97

Assistant Professor	School of Electrical and Computer Engineering, Georgia Institute of Technology	1/89-6/95
Adjunct Associate Professor	School of Earth and Atmospheric Sciences, Georgia Institute of Technology	6/96-6/97
Graduate Research Assistant	Research Laboratory of Electronics, Massachusetts Institute of Technology	2/84-12/88
Graduate Teaching Assistant	Department of Electrical Engineering and Computer Science, Massachusetts Institute of Technology	9/86-5/87 9/83-1/84
Graduate Research Assistant	Department of Electrical Engineering, Case Western Reserve University	9/81-8/83
Senior Laboratory Technician	Comsat Laboratories, Clarksburg, MD	5/80-8/80 5/81-8/81

### **RESPONSIBILITIES**

Professor of Electrical and Computer Engineering within the University of Colorado at Boulder. Responsibilities include undergraduate and graduate instruction and advisement in the general areas of electromagnetics, wave propagation and remote sensing, instrumentation, and Earth and environmental science.

Director, NOAA-CU Center for Environmental Technology (CET). Responsibilities include management of a professional scientific and engineering staff of CU/ECEE employees and students, advisement of graduate and undergraduate research assistants, development of CET laboratory and sensor infrastructure, and support of Federal and commercial sponsors on a range of microwave sensor and observation system development projects.

Previously, Chief of the Microwave Systems Development Division of the NOAA Environmental Technology Laboratory. Responsibilities included supervision of and technical guidance for approximately twenty five federal and non-federal research scientists engaged in the development of microwave radiometry, radar, and infrasound systems and related theoretical propagation and remote sensing research.

Past-President (2004-2005) of the Geoscience and Remote Sensing Society (GRSS) of the Institute of Electrical and Electronic Engineers (IEEE), and co-founding member of the Executive Committee of the IEEE Committee on Earth Observations (ICEO). The GRSS has over 3000 members worldwide, and publishes the IEEE Transactions of Geoscience and Remote Sensing and IEEE Geoscience and Remote Sensing Letters. He served on the U.S. National Research Council's Committee on Radio Frequencies (CORF) from 1989-1995. Prof. Gasiewski has been a Member of the IEEE GRSS Seniors Council, a founding member of the IEEE Committee on Earth Observations, and is a Past Chair of USNC/URSI Commission F.

### **CURRENT FIELDS OF INTEREST**

Passive and active remote sensing of atmospheric and oceanographic processes, radiative transfer and electromagnetic theory and application, signal detection, estimation, and data assimilation,

microwave instrumentation, calibration and metrology, development of surface-based, airborne, and spaceborne sensing systems for meteorology, hydrology, climatology, renewable energy. Related interests include continuum electrodynamics, spectroscopy, and statistical and quantum physics and radio spectrum management.

## TEACHING

### Quarter

### Course Title and Number

#### Georgia Institute of Technology (1989-1997):

Winter 1989	EE 3320 Electromagnetics III
Spring 1989	EE 3320 Electromagnetics III
Summer 1989	EE 3320 Electromagnetics III
Fall 1989	EE 8341 Theory of Electromagnetic Remote Sensing
Winter 1990	EE 3310 Electromagnetics II
Spring 1990	EE 3300 Electromagnetics I
Summer 1990	EE 3300 Electromagnetics I
Fall 1990	EE 3300 Electromagnetics I
Winter 1991	EE 8341 Electromagnetic Absorption, Scattering, and Propagation
Spring 1991	EE 3320 Electromagnetics III
Summer 1991	EE 3320 Electromagnetics III
Fall 1991	EE 8342 Remote Sensing Signals and Systems
Spring 1992	EE 3300 Electromagnetics I
Summer 1992	EE 3320 Electromagnetics III
Fall 1992	EE 3320 Electromagnetics III
Winter 1993	EE 8342 Remote Sensing Signals and Systems
Spring 1993	EE 8343 Electromagnetic Absorption, Scattering, and Propagation
Spring 1993	EE 8346 Instrumentation for Test and Evaluation
Fall 1993	EE 3300 Electromagnetics I
Winter 1994	EE 6250 Microwave Design Laboratory
Spring 1994	EE 8346 Instrumentation for Test and Evaluation
Fall 1994	EE 3300 Electromagnetics I
Spring 1995	EE 7255 Electromagnetic Absorption, Scattering, and Propagation
Summer 1995	EE8341 Remote Sensing Signals and Systems
Fall 1995	EE4130 Electromagnetics III
	EE8346 Instrumentation for Test and Evaluation
Winter 1996	EE4130 Electromagnetics III
Spring 1996	EE4130 Electromagnetics III
Fall 1996	EE4130 Electromagnetics III
Spring 1997	EE4038 Radar Principles

#### University of Colorado at Boulder (2006-present)

Spring 2006	ECEN 5234 Remote Sensing Signals and Systems
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Fall 2006	ECEN 5134 Electromagnetic Radiation and Antennas
Spring 2007	ECEN 5264 Electromagnetic Absorption, Scattering, and Propagation
Summer 2007	ECEN 5134 Electromagnetic Radiation and Antennas
Fall 2007	ECEN 5134 Electromagnetic Radiation and Antennas
Spring 2008	ECEN 3400 Electromagnetic Fields and Waves
Fall 2008	ECEN 5254 Remote Sensing Signals and Systems
Spring 2009	ECEN 5134 Electromagnetic Radiation and Antennas
	ECEN 5264 Electromagnetic Absorption, Scattering, and Propagation
Fall 2009	ECEN 2260 Circuits and Electronics II
	ECEN 3400 Electromagnetic Fields and Waves
	ECEN 4634/5634 Microwave and RF Measurements (co-taught)
Spring 2010	ECEN 5254 Remote Sensing Signals and Systems
Fall 2010	ECEN 5134 Electromagnetic Radiation and Antennas
	ECEN 4634/5634 Microwave and RF Measurements (co-taught)
Spring 2011	ECEN 5264 Electromagnetic Absorption, Scattering, and Propagation
	ECEN 3400 Electromagnetic Fields and Waves
Fall 2011	ECEN 5004 Environmental Signal Processing
Spring 2012	ECEN 5254 Remote Sensing Signals & Systems
Fall 2012	ECEN 5134 Electromagnetic Radiation and Antennas
Spring 2013	ECEN 5264 Electromagnetic Absorption, Scattering, and Propagation
	ECEN 2260 Circuits and Electronics II
Fall 2013	ECEN 5004 Environmental Signal Processing
	ECEN 5134 Electromagnetic Radiation and Antennas
Spring 2014	ECEN 5254 Remote Sensing Signals & Systems
	ECEN 3410 EM Waves and Transmission (EM Fields II)
Fall 2014	ECEN 4634/5634 Microwave and RF Measurements
Spring 2015	ECEN 5264 Electromagnetic Absorption, Scattering, and Propagation
Fall 2016	ECEN 5004 Environmental Signal Processing
	ECEN 1500 Sustainable Energy
Spring 2016	ECEN 5254 Remote Sensing Signals & Systems
Fall 2016	ECEN 5134 Electromagnetic Radiation and Antennas
Spring 2017	ECEN 5264 Electromagnetic Absorption, Scattering, and Propagation (with K. Zhang)
Fall 2017	ECEN 5244 Environmental Signal Processing
Spring 2018	ECEN 5254 Remote Sensing Signals & Systems
	ECEN 3410 EM Waves and Transmission (EM Fields II)
Fall 2018	ECEN 5134 Electromagnetic Radiation and Antennas
Spring 2019	ECEN 5264 Electromagnetic Absorption, Scattering, and Propagation
Fall 2019	ECEN 5244 Stochastic/Environmental Signal Processing
Spring 2020	ECEN 5254 Remote Sensing Signals & Systems

## ECEN 2260 Circuits and Electronics II

### **ADVISEMENT, GUIDANCE, AND PROFESSIONAL MANAGEMENT**

Postdoctoral Students and Visiting Faculty Supervised: 15

Ph.D. Students Supervised: 12 graduated (6 current, 14 total including GIT)

M.S. Students Supervised: 17

Ph.D., M.S., or UG Honors Defense Committees: 32

M.S. and Ph.D. Special Studies Students Projects: 17

Undergraduate UROP, Special Studies, and Senior Project/Capstone Students Supervised: 171

Professional Scientist/Engineer/Technician Supervision: 44

### **PROFESSIONAL HONORS, AWARDS, SERVICE, AND MEMBERSHIPS**

#### **Honors and Awards:**

Education Award of the IEEE Geoscience and Remote Sensing Society, 2017.

Outstanding Service Award of the IEEE Geoscience and Remote Sensing Society, 2006.

Selected by the NOAA Ocean and Atmospheric Research Office as one of 14 members of the first class of the NOAA Leadership Competency Development Program, Federal Executive Institute, Charlottesville, VA, 2000-2001.

Selected by the National Academy of Engineering as one of 100 participants in the 1999 NAE Frontiers in Engineering Symposium, University of California, Irvine, CA, October 14-16, 1999.

Certificate of Recognition for Outstanding Performance for Contributions to Microwave Radiometry during the NASA Convection and Moisture EXperiment (CAMEX), U.S. Department of Commerce NOAA Environmental Technology Laboratory, Boulder, CO, February, 1999.

Special Act Group Award, Millimeter Wave Imaging Radiometer Development Team National Aeronautics and Space Administration, NASA/GSFC, Greenbelt MD, October 1993.

UROP Outstanding Research Awards, Georgia Institute of Technology School of Electrical and Computer Engineering, academic years 1991 and 1994.

URSI Young Scientist for the XXIV URSI General Assembly, August 25-September 2, 1993, Kyoto, Japan.

1st place prize, 1989 URSI Student Paper Prize Competition, 1989 URSI National Radio Science Meeting, University of Colorado, Boulder, CO, January 4-6, 1989.

Frederick C. Henie III Departmental Teaching Award, Department of Electrical Engineering and Computer Science, Massachusetts Institute of Technology, 1986-87 academic year.

#### **IEEE Service:**

Fellow, Institute of Electrical and Electronic Engineers (IEEE) with membership in the following Societies: Antennas and Propagation, Geoscience and Remote Sensing, Microwave Theory and Techniques. IEEE Fellow citation: "*For contributions to passive microwave sounding within clouds and precipitation, and passive polarimetric microwave imaging,*" January 2002.

Member, IEEE Geoscience and Remote Sensing Society (GRSS) AdCom, January 1993-present. GRSS Vice President for Meetings and Symposia, January 1996-December 1997.

Chair, GRS-S Membership and Publicity Committee, 1998-1999. GRSS Vice President for Technical Activities, 2000-2002. GRSS Executive Vice President, 2002-2003. GRSS President

and Member of IEEE Technical Activities Board, 2004-2005. GRSS Past-President, 2006-2008. Seniors Council Member, 2009-present.  
Member, Executive Committee of the IEEE GRS-S/OES/AESS/SC Committee on Earth Observation (CEO), 2005-present. Representative of the IEEE to the EOS-II Summit, May 2004. Vice Chair for Meetings and Outreach, 2007-2010. Member-at-Large, 2011-present. Secretary, Atlanta Section of the IEEE, 1996.  
Chair, Atlanta Chapter of the IEEE AP and MTT Societies, 1992-1993. Organizer of the Atlanta Chapter of GRSS, 1993.  
Organizer and Vice-Chair of the Front Range Chapter of the GRSS, 2011-2015, Chair 2015-2017.

#### **URSI Service:**

Member, International Union of Radio Science (URSI), U.S. National Commission (USNC), Commission F (Remote Sensing and Wave Propagation), 1991-present. USNC Commission F Membership Committee Chair, January 1994-July 1997. USNC Commission F Member-at-Large, January 1996-December 1998, January 2015-December 2017. Secretary, USNC Commission F, 1999-2002 triennium. Vice Chair, USNC Commission F, 2003-2005 and 2006-2008 triennia. Chair, USNC Commission F, 2009-2011 triennium. Organizer, USNC URSI student paper prize competitions, USNC URSI National Radio Science Meetings, January 1999, 2000, 2001, 2002, and June 2003. Chair, Hans Liebe Lectureship Search Committee, 2014-present.

#### **Memberships:**

Member, American Meteorological Society 1995-present.  
Member, American Geophysical Union (Section D, Atmospheres), 1986-present,  
Member, American Association for the Advancement of Science, 1987-present.  
Member, American Society for Engineering Education, 1989-2000.  
Elected to full membership in Sigma Xi, 1990.  
Elected to membership in Tau Beta Pi, 1981.  
Member of Eta Kappa Nu and Theta Tau since 1981.

#### **Other Service:**

Member, National Research Council Committee on a Survey of the Active Sensing Uses of the Radio Spectrum, July 2013-2015.  
Co-Chair, National Research Council Committee on "Spectrum Management for Science in the 21<sup>st</sup> Century," February 2007-December 2009.  
General Co-chair, IEEE GRSS 2006 International Geoscience and Remote Sensing Symposium (IGARSS 2006), Denver, CO, July 31-August 4, 2006.  
Representative of the Committee on Space Research (COSPAR) to the Inter-Union Commission on Frequency Allocations (IUCAF), International Council of Scientific Unions (ICSU), December 1993-December 2001.  
Guest Co-editor, Special Issues of the IEEE Transactions on Geoscience and Remote Sensing, IGARSS 2000 issue, AMSR-E Sea Ice 2006 issue, and Applications of UAVs 2009 issue.  
Technical Program Committee (TPC) chair of the IEEE GRSS 2000 International Geoscience and Remote Sensing Symposium (IGARSS 2000), Honolulu, Hawaii, July 24-28, 2000.  
Associate Editor, *Radio Science*, July 1993 through October 1996.

Member, National Research Council, Committee on Radio Frequencies, 1989-1995.  
General chair, IEEE GRSS/LEOS/MTTS Combined Optical and Microwave Earth and  
Atmosphere Sensing Symposium (CO-MEAS 1995), Atlanta, GA, April 3-6, 1995.

## **ENGINEERING CONSULTING**

Prof. Gasiewski has been a consultant to the electrical engineering, radio science, remote sensing, and Earth observation community since 1981. His contributions have been to numerous small and large companies, government agencies and laboratories, universities, and international organizations.

## **PUBLICATIONS (Refereed)**

### **Chapters in books:**

Stone, w., B. Hogan, V. Siegel, J. Harman, C. Flesher, E. Clark, O. Pradhan, A.J. Gasiewski, S. Howe and T. Howe, "Project VALKYRIE: Laser-Powered Cryobots and Other Methods for Penetrating Deep Ice on Ocean Worlds," Chapter 4 in *Outer Solar Worlds*, Springer International Publishing AG (part of Springer Nature), 2018.

Gasiewski, A.J., W. Croswell, and C.T. Swift, "Radiometer Antennas," Chapter 41 in *Antenna Engineering Handbook*, 4<sup>th</sup> Edition, (J. Volakis, ed.), McGraw-Hill, 2007.

Bizzarri, B., A.J. Gasiewski, and D.H. Staelin, "Observing Rain by Millimetre-Submillimetre Wave Sounding from Geostationary Orbit", Chapter 50 in *Measuring Precipitation from Space: EURAINSAT and the Future*, (V. Levizzani, P. Bauer, and J.F. Turk eds.), Springer: New York, series on Advances in Global Change Research, vol. 28, pp. 675-692, ISBN 978-1-4020-5834-9 (print), ISBN 978-1-4020-5835-6 (online), May 2007.

Gasiewski, A.J., "Microwave Radiative Transfer in Hydrometeors," Chapter 3 in *Atmospheric Remote Sensing by Microwave Radiometry*, (M.A. Janssen, ed.), New York: John Wiley and Sons (1993).

### **Peer-Reviewed Journal Articles (58):**

Periasamy, L., and A.J. Gasiewski, "Antenna Design and Prelaunch Performance of a Low Cost 118.75 GHz Temperature Sounding CubeSat Radiometer with 3D Printed Corrugated Feed and Offset Reflector Optics," accepted for publication in *IEEE Trans. Ant. Propagation*, January 2020.

Zhang, K., and A.J. Gasiewski, "Multi-Band Simulations of Multi-stream Polarimetric Microwave Radiances over Aspherical Hydrometeors," *J. Geophys. Res.: Atmospheres*, vol. 123, issue 22, pp. 12,738-12,761, 27 November 2018, DOI 10.1029/2018JD028769.

Dai, E., A.J. Gasiewski, M. Stachura, and E.M. McIntyre, "Microstrip Colinear Antenna Array for a Small Unmanned Aerial System Lobe Differencing Correlation Radiometer", *IEEE Trans. Ant. Propagation*, vol. 66, no. 4, April 2018.

Sharma, P., K. Newman Freye, C.S. Long, A.J. Gasiewski, and F. Barnes, "Use of Wavelet

Transform to Detect Compensated and Decompensated Stages in the Congestive Heart Failure Patient," accepted for publication in *Biosensors*, September 15, 2017, published in *Biosensors* online, September 20, 2017.

Gordon, J.A., D.R. Novotny, M.H. Francis, R.C. Wittmann, M.L. Butler, A.E. Curtin, J.R. Guerrieri, L. Periasamy, and A.J. Gasiewski, "Characterization of Millimeter-wave 3D-printed Antennas for CubeSat Applications Using a Robotic Antenna Range," accepted for publication in *IEEE Antennas and Propagation Magazine*, Special Issue on CubeSats, December 2016.

Sandeep, S., and A.J. Gasiewski, "Effect of Geometry on the Reflectivity Spectrum of Radiometer Calibration Targets," *IEEE GRS Letters*, vol. 11, no. 1, pp. 84-88, January 2014.

Sandeep, S., and A.J. Gasiewski, "Transient Analysis of Dispersive, Periodic Structures for Oblique Plane Wave Incidence Using Laguerre Marching-on-in-Degree (MoD)," *IEEE Trans Antennas Prop.*, vol. 61, no. 8, pp. 4132-4138, August 2013.

Tian, M., and A.J. Gasiewski, "A Unified Microwave Radiative Transfer Model for General Planar Stratified Media: Slab Formulation," accepted for publication in *IEEE Trans. Geosci. Remote Sensing.*, October 2012.

Buehler, S.A., E. Defer, F. Evans, S. Eliasson, J. Mendrok, P. Eriksson, C. Lee, C. Jimenez, C. Prigent, S. Crewell, Y. Kasai, R. Bennartz, and A. J. Gasiewski, "Observing Ice Clouds in the Submillimeter Spectral Range: The CloudIce Mission Proposal for ESA's Earth Explorer 8," *Atmos. Meas. Tech.*, 5, 1529–1549, 2012. ([www.atmos-meas-tech.net/5/1529/2012/](http://www.atmos-meas-tech.net/5/1529/2012/) doi:10.5194/amt-5-1529-2012)

D.J. Cavalieri, T. Markus, A. Ivanoff, J.A. Miller, L. Brucker, M. Sturm, J.A. Maslanik, J.F. Heinrichs, A. J. Gasiewski, C. Leuschen, W. Krabill, and J. Sonntag, "A Comparison of Snow Depth on Sea Ice Retrievals Using Airborne Altimeters and an AMSR-E Simulator," *IEEE Trans Geosci. Remote. Sensing.*, vol. 50, no. 8, pp. 3027-3040, August, 2012.

Sandeep, S., and A.J. Gasiewski, "Electromagnetic Analysis of Radiometer Calibration Targets Using Dispersive 3D FDTD," *IEEE Trans. Ant. Propagat Trans.*, vol. 60, no. 6, pp. 2821-2828, June 2012.

Sandeep, S., and A.J. Gasiewski, "Fast Jacobian Mie Library for Terrestrial Hydrometeors," *IEEE Trans. Geosci. Remote Sensing*, vol. 50, no. 3, March 2012.

Huang, D., A.J. Gasiewski, and W. Wiscombe, "Tomographic Retrieval of Cloud Liquid Water Fields from a Single Scanning Microwave Radiometer Aboard a Moving Platform – Part 1: Field Trial Results from the Wakasa Bay Experiment," *Atmos. Chem. Phys.*, vol. 10, pp. 6685–6697, July 22 2010.

Huang, D., A.J. Gasiewski, and W. Wiscombe, "Tomographic Retrieval of Cloud Liquid Water Fields from a Single Scanning Microwave Radiometer Aboard a Moving Platform – Part 2:



Observation System Simulation Experiments," *Atmos. Chem. Phys.*, vol. 10, pp. 6699–6709, July 22 2010.

Cimini, D., E.R. Westwater, and A.J. Gasiewski, "Temperature and Humidity Profiling in the Arctic Using Ground-Based Millimeter-Wave Radiometry and 1DVAR," *IEEE Trans. Geosci. Rem. Sensing* (TGARS), vol. 48, no. 3, part II, pp. 1381-1388, March 2010.

Kurtz, N.T., T. Markus, D.J. Cavalieri, L.C. Sparling, W. Krabill, A.J. Gasiewski, and J.G. Sonntag, "Estimation of Sea Ice Thickness Distributions Through the Combination of Snow Depth and Satellite Laser Altimetry Data," *J. Geophys. Res.*, 114, C10007, doi:10.1029/2009JC005292, October 8, 2009.

Stankov, B.B., A.J. Gasiewski, D. Cline, B. L. Weber, G. A. Wick, and M. Klein, "High-Resolution Airborne Polarimetric Microwave Imaging of Snow Cover During the NASA Cold Lands Processes Experiment (CLPX)," vol. 46, no. 11, pp. 3672-3693, November 2008.

Mattioli, V., E.R. Westwater, D. Cimini, A.J. Gasiewski, M. Klein, and V.Y. Leuski, "Microwave and Millimeter-wave Radiometric and Radiosonde Observations in an Arctic Environment," *J. Atmos. Oceanic Tech.*, vol. 25, no. 10, pp. 1768-1777, October, 2008.

Bindlish, R., T.J. Jackson, A.J. Gasiewski, M. Klein, B. Stankov, M.H. Cosh, I. Mladenova, E. Vivoni, V. Lakshmi, C. Watts, and T. Keefer, "PSR Based Soil Moisture Estimates in High Vegetation and Rough Topography," *Rem. Sensing Env.*, vol. 112, issue 2, pp. 375-390, February, 2008.

Naoki, K., J. Ukita, F. Nishio, M. Nakayama, J. C. Comiso, and A.J. Gasiewski, "Thin sea ice thickness as inferred from passive microwave and in situ observations," *J. Geophys. Res.*, 113, 11 pp, C02S16, February, 2008.

Cimini, D., E.R. Westwater, A.J. Gasiewski, M. Klein, V. Leusky, and S. Dowlatshahi, "The Ground-based Scanning Radiometer: A Powerful Tool for Study of the Arctic Atmosphere," *IEEE Trans. Geosci. Remote Sensing*, vol. 45, no. 9, pp 2759-2777, September, 2007.

Cimini, D., E.R. Westwater, A.J. Gasiewski, M. Klein, V. Leuski, and J. Liljegren, "Ground-based Millimeter- and Submillimeter-Wave Observations of Low Vapor and Liquid Water Contents," *IEEE Trans. Geosci. Remote Sensing*, vol. 45, no. 7, Part II, pp. 2169-2180, July 2007.

Walter, B., D.J. Cavalieri, K.L. Thornhill, and A.J. Gasiewski, "Aircraft Measurements of Heat Fluxes Over Wind-Driven Coastal Polynyas in the Bering Sea," *IEEE Trans. Geosci. Remote Sensing*, vol. 44, no. 11, pp. 3118-3134, November 2006.

Stroeve, J.C., T. Markus, J.A. Maslanik, J.A., D.J. Cavalieri, A.J. Gasiewski, J.F. Heinrichs, J. Holmgren, D.K. Perovich, and M. Sturm, "Impact of Surface Roughness on AMSR-E Sea Ice Products," *IEEE Trans. Geosci. Remote Sensing*, vol. 44, no. 11, pp. 3103-3117, November 2006.

Markus, T., D.J. Cavalieri, A.J. Gasiewski, M. Klein, J.A. Maslanik, D.C. Powell, B.B. Stankov, J.C. Stroeve, and M. Sturm, "Microwave Signatures of Snow on Sea Ice: Observations," *IEEE Trans. Geosci. Remote Sensing*, vol. 44, no. 11, pp. 3081-3090, November 2006.

Powell, D.C., T. Markus, D.J. Cavalieri, A.J. Gasiewski, M. Klein, J.A. Maslanik, J.C. Stroeve, and M. Sturm, "Microwave Signatures of Snow on Sea Ice: Modeling," *IEEE Trans. Geosci. Remote Sensing*, vol. 44, no. 11, pp. 3091-3102, November 2006.

Cavalieri, D.J., T. Markus, D.K. Hall, A. Gasiewski, M. Klein, and A. Ivanoff, "Assessment of EOS Aqua AMSR-E Arctic Sea Ice Concentrations Using Landsat 7 and Airborne Microwave Imagery," *IEEE Trans. Geosci. Remote Sensing*, vol. 44, no. 11, pp. 3057-3069, November 2006.

Maslanik, J.A., M. Sturm, M. Belmonte Rivas, A.J. Gasiewski, J.F. Heinrichs, U.C. Herzfeld, J. Holmgren, M. Klein, T. Markus, D.K. Perovich, J.G. Sonntag, J.C. Stroeve, and K. Tape, "Spatial Variability of Barrow-Area Shore-Fast Sea Ice and Its Relationships to Passive Microwave Emissivity," *IEEE Trans. Geosci. Remote Sensing*, vol. 44, no. 11, pp. 3021-3031, November 2006.

Bindlish, R., T.J. Jackson, A.J. Gasiewski, M. Klein, and E.G. Njoku, "Soil Moisture Mapping and AMSR-E Validation Using the PSR in SMEX02," *Rem. Sensing Env.* vol. 103, no. 2, pp. 127-139, July 30, 2006.

Johnson, J.T., A.J. Gasiewski, B. Guner, G.A. Hampson, S.W. Ellingson, R. Krishnamachari, N. Niamsuwan, E. McIntyre, M. Klein, and V. Leuski, "Airborne Radio Frequency Interference Studies at C-band using a Digital Receiver," *IEEE Trans. Geosci. Remote Sensing*, vol. 44, no. 7, pp. 1974-1985, July 2006.

Fahey, D.W., J.H. Churnside, J.W. Elkins, A.J. Gasiewski, K.H. Rosenlof, S. Summers, M. Aslaksen, T. A. Jacobs, J. D. Sellars, C. D. Jennison, L. C. Freudinger, and M. Cooper, "Altair Unmanned Aircraft Mission Achieves Demonstration Goals," *EOS Trans. AGU* vol.87, no. 20, pp 197 and 201, May 16, 2006.

Jackson, T.J., R. Bindlish, A.J. Gasiewski, B. Stankov, M. Klein, E.G. Njoku, D. Bosch, T. Coleman, C. Laymon, and P. Starks, "Polarimetric Scanning Radiometer C and X Band Microwave Observations During SMEX03," *IEEE Trans. Geosci. Remote Sensing*, vol. 43, no. 11, pp. 2418-2430, November, 2005.

Tedesco, M., E.J. Kim, A.J. Gasiewski, M. Klein, and B. Stankov, "Analysis of Multi-Scale Radiometric Data Collected During the Cold Land Processes Experiment-1 (CLPX-1)," *Geophys. Res. Letters.*, vol. 32, no. 18, L18501 (10.1029/2005GL023006), September, 2005.

Smith, D.F., A.J. Gasiewski, D.L. Jackson, and G.A. Wick, "Spatial Scales of Tropical Precipitation Inferred from TRMM Microwave Imager Data," *IEEE Trans. Geosci. Remote Sensing*, vol. 43, no. 7, pp. 1542-1551, July 2005.

Racette, P.E., E.R. Westwater, Y. Han, A.J. Gasiewski, M. Klein, D. Cimini, D.C. Jones, W. Manning, E.J. Kim, J.R. Wang, V. Leuski, and P. Kiedron, "Measurements of Low Amounts of Precipitable Water Vapor Using Ground-Based Millimeterwave Radiometry," *J. Atmos. Ocean. Tech.*, Vol. 22, No. 4, pp. 317–337, April 2005.

Voronovich, A.G., A.J. Gasiewski, and B.L. Weber, "A Fast Multistream Scattering-Based Jacobian for Microwave Radiance Assimilation," *IEEE Trans. Geosci. Remote Sensing*, vol. 42, no. 8, pp. 1749-1761, August 2004.

Younis, M., J. Maurer, J. Fortuny-Guasch, R. Schneider, W. Wiesbeck, and A.J. Gasiewski, "Interference from 24-GHz Automotive Radars to Passive Microwave Earth Remote Sensing Satellites," *IEEE Trans. Geosci. Remote Sensing*, vol. 42, no. 7, pp. 1387-1398, July 2004.

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Seminar Presentations: 86

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