January 25, 2025

Albin J. Gasiewski, Ph.D.

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

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EDUCATIONAL BACKGROUND

Degree	Year	University	Field
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

Title	Organization	Years
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
Adjoint 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. He is also co-founder and Chief Scientist of Orbital Micro Systems, Inc., a Boulder, CO-based company developing advanced passive microwave instrumentation for global environmental observation and data services.

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 currently has over 7000 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. He is currently Chair of the Hans Liebe Fellow Search Committee of USNC/URSI.

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
Fall 2006	ECEN 5134 Electromagnetic Radiation and Antennas
Spring 2007	ECEN 5264 Electromagnetic Absorption, Scattering, and Propagation
	ECEN 5134 Electromagnetic Radiation and Antennas
Summer 2007	ECEN 5134 Electromagnetic Radiation and Antennas
Fall 2007	ECEN 3400 Electromagnetic Fields and Waves
Spring 2008	ECEN 5254 Remote Sensing Signals and Systems
Fall 2008	ECEN 5134 Electromagnetic Radiation and Antennas
Spring 2009	ECEN 5264 Electromagnetic Absorption, Scattering, and Propagation
	ECEN 2260 Circuits and Electronics II
Fall 2009	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
Fall 2020	ECEN 5134 Electromagnetic Radiation and Antennas
Spring 2021	ECEN 3400 Electromagnetic Fields and Waves
	ECEN 5264 Electromagnetic Absorption, Scattering, and Propagation
Fall 2021	ECEN 5244 Stochastic/Environmental Signal Processing
Spring 2022	ECEN 5254 Remote Sensing Signals & Systems
	ECEN 2420 Electronics for Wireless Systems
Fall 2022	ECEN 3400 Electromagnetic Fields and Waves
Spring 2023	ECEN 5264 Electromagnetic Absorption, Scattering, and Propagation
	ECEN 2420 Electronics for Wireless Systems
Fall 2023	ECEN 5244 Stochastic/Environmental Signal Processing

ADVISEMENT, GUIDANCE, AND PROFESSIONAL MANAGEMENT

Postdoctoral Students and Visiting Faculty Supervised: 15
Ph.D. Students Supervised: 12 graduated (2 current)
M.S. Students Supervised: 25
Ph.D., M.S., or UG Honors Defense Committees: 45
M.S. and Ph.D. Special Studies Students Projects: 21
Undergraduate UROP, Special Studies, and Senior Project/Capstone Students Supervised: 183
Professional Scientist/Engineer/Technician Supervision: 49

PROFESSIONAL HONORS, AWARDS, SERVICE, AND MEMBERSHIPS

Honors and Awards:

Life Fellow, Institute of Electrical and Electronic Engineers (IEEE), selected for IEEE Life membership, August 21, 2024.

Golden Florin Award of the Italian Center for Remote Sensing (CeTeM) and IEEE Geoscience and Remote Sensing Society, for "contributions to the theory, technology, and practice of microwave radiometry," 2024.

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-present. 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:

Participant, NSF Workshop on Ethics and Societal Interactions of Climate Intervention, October 2024-January 2025.
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 21st 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), December1993-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. He is currently chief scientist and co-founder of Orbital Micro Systems, Inc.

Patents:

"Multipath Cross Correlation Radiometry"
Inventor: Albin J. Gasiewski
Publication number: WO2023205734A1 applied April 20, 2023 (patent pending)

"Radiometer and Radiometer-Based Soil Moisture Determination Method"
Inventors: Albin J. Gasiewski, Eryan Dai, Jack Elston, Maciej Stachura, Michael Hurowitz
Patent number: US 12,140,551 B2, issued November 12, 2024

"Passive polarimetric microwave radiometer for detecting aircraft icing conditions"
Inventors: Fredrick S. Solheim, Albin J. Gasiewski
Patent number: 6377207 issued April 23, 2002

"Dual-polarized cross-correlating radiometer and method and apparatus for calibrating same"
Inventor: Albin J. Gasiewski

Patent number: 5231404 issued July 27, 1993

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, 4th 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 (70 total):

Kim, K. Y., Zhu, Z., Zhang, R., Fang, B., Cosh, M.H., Russ, A.L. Dai, E., Elston, J., Stachura, M/, Gasiewski, A.J., and Lakshmi, V., "Precision Soil Moisture Monitoring with Passive Microwave L-Band UAS Mapping," in *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, vol. 17, pp. 7684-7694, 2024, doi: 10.1109/JSTARS.2024.3382045.

A. Goad, A., S.A. Seguin, C. Baylis, T. Van Hoosier, E. Lever, A.J. Gasiewski, A. Venkitasubramony, and R. J. Marks, "Brokering Spectrum Sharing Using Dynamic Spatial-Spectral Masks," in *IEEE Trans. Electromagnetic Compatibility*, vol. 66, no. 4, pp. 1243-1251, Aug. 2024. doi: 10.1109/TEMC.2024.3403510.

Pradhan, O., L.J. Scally, A.J. Gasiewski, A. Gorashi, D. Pizio, and D. Kraft, "Measurements from an Open Path Terahertz Transmissometer for Deterministic and Stochastic Propagation Studies," IEEE Trans. Ant. Propagation, vol. 71, no. 10, pp. 8184-8196, October 2023, doi: 10.1109/TAP.2023.3290084.

Shi, H., S. -M. Lee, B -J. Sohn, A.J. Gasiewski, W.N. Meier, G. Dybkjær, and S.-W. Kim, "Estimation of Winter Snow Depth, Sea Ice Thickness and Density, and Ice Freeboard by Combining Cryosat-2, AVHRR, and AMSR Measurements," IEEE Trans. Geosci. Remote Sensing, vol. 61, vol. 61, pp. 1-18, April 2023, Art no. 4300718, doi: 10.1109/TGRS.2023.3265274.

Lee, S.-M. and A. J. Gasiewski, "A Physically Based Two-Scale Ocean Surface Emissivity Model Tuned to WindSat and SSM/I Polarimetric Brightness Temperatures," in IEEE Transactions on

Geoscience and Remote Sensing, vol. 60, pp. 1-23, 2022, Art no. 4205523, doi: 10.1109/TGRS.2021.3133852.

Lee, S.-M., A. J. Gasiewski and B.-J. Sohn, "Influences of Two-Scale Roughness Parameters on the Ocean Surface Emissivity From Satellite Passive Microwave Measurements," in IEEE Transactions on Geoscience and Remote Sensing, vol. 60, pp. 1-12, 2022, Art no. 4204112, doi: 10.1109/TGRS.2021.3105915.

Lee, S.-M., Shi, H., Sohn, B.-J., Gasiewski, A. J., Meier, W. N., & Dybkjær, G. "Winter Snow Depth on Arctic Sea Ice from Satellite Radiometer Measurements (2003–2020): Regional Patterns and Trends,". Geophysical Research Letters, Vol. 48, Issue 15, August 2021, e2021GL094541. https://doi.org/10.1029/2021GL094541.

Frounchi, M., A. Alizadeh, H. Ying, C.T. Coen, A.J. Gasiewski, and J.D. Cressler, "Millimeter-Wave SiGe Radiometer Front-End with Transformer-Based Dicke Switch and On-Chip Calibration Noise Source," accepted for publication in IEEE J. Solid State Circuits, January 2021.

O. Pradhan and A. J. Gasiewski, "Endfire Synthetic Aperture Radar for a Cryobot for Exploration of Icy Moons and Terrestrial Glaciers," in IEEE Transactions on Geoscience and Remote Sensing, doi: 10.1109/TGRS.2020.3045651, January 2021.

Zhang, K. and A.J. Gasiewski, "Fast 3D Inhomogeneous Radiative Transfer Model Using A Planar-Stratified Forward Algorithm and Horizontal Perturbation Series," IEEE Trans. Geosci. Remote Sensing, Print ISSN: 0196-2892, Online ISSN: 1558-0644, DOI 10.1109/TGRS.2020.2977125, vol. 58, no. 10, pp 6861-6873, 2020.

Dai, E., A. J. Gasiewski, A. Venkitasubramony, M. Stachura and J. Elston, "High Spatial Resolution Soil Moisture Mapping Using a Lobe Differencing Correlation Radiometer on a Small Unmanned Aerial System," in IEEE Trans. on Geosci. Remote Sensing, vol. 59, no. 5, pp. 4062-4079, May 2021, doi: 10.1109/TGRS.2020.3005385.

S.-M. Lee, W. N. Meier, B. -J. Sohn, H. Shi and A. J. Gasiewski, "Estimation of Arctic Basin-Scale Sea Ice Thickness from Satellite Passive Microwave Measurements," IEEE Trans. Geosci. Remote Sensing, doi: 10.1109/TGRS.2020.3026949, October 2020.

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," IEEE Transactions on Antennas and Propagation, vol. 68, no. 6, pp. 4881-4893, 2020, 10.1109/TAP.2020.2970099.

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," 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 Issus 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," IEEE Trans. Geosci. Remote Sensing, vol. 51, no. 7, pp. 4103-4118, July 2013.

Buehler, S.A., E. Defer, F. Evans, S. Eliasson, J. Mendrok, P. Eriksson, C. Lee, C. Jimenéz, 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/ 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.

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