Jorge Luis Salazar-Cerreno, Ph.D.

Assistant Professor, School of Electrical & Computer Engineering
Gallogly College of Engineering, The University of Oklahoma
3190 Monitor Drive, Norman OK 73019 USA.
salazar@ou.edu 405-9227848 http://ou-arrc-paard.com/

Education

June 2012 — **Ph.D., - University of Massachusetts, Amherst, MA**
Phased-array antennas and weather radar systems.
Thesis title: *The feasibility of low-cost, dual-polarized, phase-tilt antenna arrays for dense radar networks.*
Advisors: Dr. David McLaughlin and Dr. David Pozar

Dec 2002 — **M.Sc., Electrical Engineering, -University of Puerto Rico. Mayagüez, PR**
Ultra-wide-band antenna design
Thesis title: *Sensor development for cross-swell radar tomography for detection of underground dense non-aqueous phase liquid contaminants*
Advisor: Dr. Rafael Rodriguez

July 1994 — **B.Sc., Electronic Engineering, University Antenor Orrego, Trujillo, Perú.**
Radio and Telecommunications.

Employment History

8 years of experience in the telecommunications industry, 13 years of RF research experience, and 6 years of teaching experience in higher education

2015 – 2019 — **Assistant Professor,** School of Electrical and Computer Engineering, The University of Oklahoma, Norman, OK.

2014 – 2015 — **Research Scientist,** Advanced Radar Research Center (ARRC), The University of Oklahoma, Norman, OK.

2012 – 2014 — **ASP Postdoctoral Fellow,** National Center for Atmospheric Research (NCAR), Boulder, CO.

2006 – 2012 — **Research Assistant,** University of Massachusetts, Amherst, MA.

2003 – 2004 — **RF Consultant,** Invision Engineering Corp., Mayagüez, PR.

2002 – 2003 — **ECE Lecturer,** University of Puerto Rico, Mayagüez, PR.

ECE Lecturer, University of Puerto Rico, Aguadilla, PR.

2000 – 2002 — **Research Assistant,** University of Puerto Rico, Mayagüez, PR.

1996 – 2002 — **Project Manager & RF Engineer,** Telefónica Móviles del Perú/Movista, Lima, Perú.

1994 – 1995 — **Lecturer,** SISE Instituto Superior, Lima, Perú

1993 – 1994 — **Electronic Engineer,** Sistemas de Seguridad S.A., Trujillo, Perú.

Scientific Grants & Contracts

Research collaboration with NOAA, NSF, Rfcore, and Nanowave was expanded. In 2017, my research group obtained new grants from the Office of Naval Research Laboratory (ONR), Instituto Geofisico del Peru (IGP), and the Instituto Nacional de Comunicaciones del Peru (INICTEL). In 2018, new collaborative relationships with the U.S. Navy Research Laboratory (NRL), National Center for Atmospheric Research (NCAR), and Jet Propulsion Laboratory (JPL-NASA) were initiated. These relationships secured new grants to support foundations work in millimeter wave antenna research. In 2019, my team explored new research topics in higher frequencies (40 GHz to 110 GHz) for front-end design for telecommunications and automobile radar system applications. A new industry collaboration with METAWAVE, a cutting-edge automobile sensor company, secured funds to support research on millimeter wave antenna and radars.

Summary of Research Expenditures:

Expenditures 2019: $1,122.979, OU Ranking: 14, COE Ranking: 3, ECE Ranking: 2

Expenditures 2018: $915,272, OU Ranking: 22, COE Ranking: 3, ECE Ranking: 3

Expenditures 2017: $427,986, OU Ranking: 52, COE Ranking: 2, ECE Ranking: 4

Expenditures 2016: $461,652, OU Ranking: 48, COE Ranking: 6, ECE Ranking: 6

Expenditures 2015: $81,910, OU Ranking: 226, COE Ranking: 12, ECE Ranking: 13

Total Cumulative Research Expenditures from 2015-2019: $3,009,799.

Mentoring, Advising and Teaching

In Spring 2015, I created a research team called the *Phased Array Antenna Research and Development Group* (***PAARD,*** www.ou-arrc-paard.com.) Since then, I had the opportunity of leading a research group of seventeen students and two fellows postdoctoral. One Ph.D. and two MS students already graduated in 2018. Two additional Ph.D. students and one MS students will be graduated in December of 2019. By the end of my tenure term, 5 PhD students and 3 MS students will have graduated.

Fellow Postdoctoral & Research associate (2):

2015 – present — **Dr. N. Aboserwal**, Research Associate, ARRC, The University of Oklahoma.

2018 – present — **Dr. Z. Qamar**, Fellow Postdoctoral, ARRC, The University of Oklahoma.

Alumni (4):

2015 – 2018 — **MS. Simon Duthoit**, RF System Engineer at NSI-MI.

Ph.D. Alessio Mancinni, RF System Engineer at NSI-MI.

2018 – 2019 — **MS. Alexander Stringer**, Electronic/Software Engineer at the Department of the Air Force.

MS. Joel Love, ECE, MS., Electrical Engineer at KBRWyle Laboratories.

Doctoral Students (6):

2015 – 2019 — **Javier Ortiz**, ECE, Ph.D., The University of Oklahoma.

2015 – 2020 — **Jose Diaz**, ECE, Ph.D., The University of Oklahoma.

2017 – 2020 — **Arturo Umeyama** , ECE, Ph.D., The University of Oklahoma.

2016 – 2020 — **Rodrigo Lebron**, ECE, Ph.D., The University of Oklahoma.

2018 – 2023 — **Nim Ccoillo**, ECE, Ph.D., The University of Oklahoma.

2019 – 2023 — **MS. Joel Love**, ECE, Ph.D., The University of Oklahoma.

Mentoring, Advising and Teaching (continued)

Master Students (3):

2019 – 2021
- **Thomas Brachtenbach**, ECE, MS.,The University of Oklahoma.
- **Kevin Costein**, ECE, MS., he University of Oklahoma.

Undergraduate Students (8):

2017 – 2017
- **Ethan Coffey**, ECE, BS.,The University of Oklahoma.

2016 – 2018
- **David Hayes**, ECE, BS., The University of Oklahoma.
- **K. Costein**, ECE, BS., The University of Oklahoma.
- **Thomas Brachtenbach**, ECE, BS., The University of Oklahoma.
- **Brent Wolf**, ME, BS., The University of Oklahoma.

2016 – 2017
- **William Doyle**, ECE, BS., The University of Oklahoma.

2016 – 2016
- **Jose Galvez**, ECE, BS., Universidad La Catolica, Lima-Peru.
- **Robert Bains**, ME, BS., Rice University.

Teaching:

Spring 2016, 2017
- **Electrical Circuit II (ECE 3723).**

Fall 2016, 2017
- **Phased Array Antenna (ECE 5990).**

Spring 2016,2019
- **Special Study: Advance Antenna Design (ECE 5990) .**

Patents & Invention Disclosures

Patents:

Inventors: J. Salazar (MI), Title: Dual-polarized Radiating Patch. **Patent No:** US9520655B2. **Status:** Issued on Dec. 13, 2016

Inventors: J. Salazar (MI), D. Schmidt, C. Fulton, R. Palmer, R. Lebron, A. Mancini, S. Duthoit, M. McCord, J. Meier, and R. Kelley. **Title:** Radio Frequency (RF) Scanner Multi Degree of Freedom Antenna Calibration and Characterization Robot. **Patent No:** US 2018/0090837. **Status:** Published on March. 29, 2018.

Inventors: J. Salazar (MI), B.L. Cheong and A Mancini. **Title:** Apparatus and Method for Wet Radome Characterization and Radar Calibration. **International Patent No:** US WO 2018/195542 A1. **Status:** Published on October. 25, 2018.

Invention Disclosures:

Inventors: J. Salazar (MI), C. Fulton, P. Chillson, and S. Duthoit. **Title:** An In-situ Unmanned Aircraft for Antenna Characterization, Radome Inspection and Radar Calibration. **Invention Disclosure No:** 2017-052. **Status:** Submitted to OU on April. 2, 2017.

Inventors: J. Salazar (MI), R. Lebron, and Z. Qamar. **Title:** A Novel Multipurpose Millimeter Wave RF Scanner for Antenna and Array Characterization. **Invention Disclosure No:** 2019-043. **Status:** Submitted to OU on March, 8, 2019.

Service & Professional Affiliations

OU service:

2018 – 2019 — **Graduate Faculty Appeals Panel Member at The University of Oklahoma**, Nominated by the Graduate College for service on the academic appeals panel for the 2018-19 academic year.

2016 – 2019 — **Chair of the ARRC Distinguished Lecture Radar Seminar (DLRS) series.** This committee selects speakers, request financial support, promote seminars, and works with the ARRC staff members to ensure an effective seminar in radar science and radar engineering technology.

External service:

2017 – Present — **Member of IEEE Antennas and Propagation Standing and Educational Committee**, my role in this committee in reviewing grant proposals and design contest proposals.

Journal reviewer service:

2018-present — **IEEE Antennas and Wireless Propagation Letters (AWPL).**

2016-present — **Radio Science.**

2015-present — **John Wiley and Sons.**

2014-present — **IEEE Transactions on Antennas and Propagation (TAP) .**

IEEE Transactions on Geoscience and Remote Sensing (TGARS).

IET Microwaves, Antennas and Propagation (IET).

2012-present — **AMS Atmospheric Oceanic Technology Journal (AMS-JTECH).**

Affiliations

2014-present — **Advanced Radar Research Center (ARRC), The University of Oklahoma.**

2018-present — **Center for Autonomous Sensing and Sampling (CASS), The University of Oklahoma.**

2014-2016 — **Adjunct Professor at the University of Puerto Rico Mayaguez (UPRM).**

2013-2014 — **Research Scientist Affiliate at Colorado State University (CSU).**

Memberships

2016-present — **IEEE Aerospace and Electronics Systems Society (AESS).**

2014-present — **IEEE Senior Member.**

2000-present — **IEEE Antenna and Propagation Society (APS).**

2012-present — **Atmospheric Meteorology Society (AMS).**

Antenna Measurement Techniques Association (AMTA).

2001-present — **Tau Beta Pi honor society.**

1992-1994 — **ROTARY/Rotaract Club (California), Trujillo, Perú.**

Miscellaneous

2018 — **Chair of short course title New Trends in Phased Array Antennas and Calibration, IEEE Radar Conference at Oklahoma City, OK**

2017 — **Co-Chair of session titled Phased Array Weather Radar at the 38 conference on Radar Meteorology at Norman, OK..**

Service & Professional Affiliations (continued)

- **Co-Chair of session titled Phased Array Weather Radar at the 38 conference on Radar Meteorology at Norman, OK.**

2016
- **Co-Chair a special session titled Dual-Polarization Weather Radar Arrays, at the 2016 IEEE Phased Array Systems and Technology Symposium.**

2015
- **Chair of short course title Phased Short Course on Dual-Polarized Phased Array Antennas for Weather Radars, 2015 AMS Radar Conference at Norman, OK.**

2013-2014
- **Member of Earth Observation Laboratory (EOL-NCAR) diversity committee.**

2014
- **Co-Chair on session: 503: Complex Materials and Non-Foster Circuits for Antenna Radiation, Scattering and Measurement, 2014 APS/URSI conference**

2013
- **Co-chair on emerging technology and future directions session, 2013 AMS radar conference**

2011-2012
- **Senator of graduate school student (GSS), University of Massachusetts.**

2012
- **Member of the graduate dean search committee, University of Massachusetts.**

2008–2012
- **Executive member of Collaborative Adaptive Sensing for the Atmosphere (CASA-ERC)**

2008–2010
- **Chair of student leadership council of Collaborative Adaptive Sensing for the Atmosphere (CASA-ERC), University of Massachusetts.**

2001–2002
- **President of ECE graduate student's association AEGIEC, Mayaguez, PR.**

Invited Talks & Short courses

Invited Presentation:

Dec 11, 2019
- **New Trends in Antennas and Sensors for Radar and Communication Systems**, Invited keynote talk at the 2019 Microwave Antenna and Sensors Workshop.

June 03, 2019
- **New Trends in Antenna Array Architectures for Multi-function Phased Radar**, Invited talk to NASA-JPL Seminar Series.

March 06, 2019
- **A Low-Cost Ka-Band Imaging Phased Array Antenna for 5G Massive MIMO System**, Invited talk to The International Workshop on Antenna Technology (2019 iWAT).

May 24, 2018
- **Re-configurable Multi-band Shared-Aperture Antenna for Multi-function Phased-Array Radar System**, NASA Communication and Intelligent System Division, NASA Glenn Research Center, Ohio OH.

Aug. 2, 2018
- **New Trends on Front-end Active Array Technology for Multi-function Phased-Array Radar System**, invited talk at The Antenna Research Group (ARG) at the University of Colorado Boulder (CU), Boulder, CO.

Nov. 21, 2018
- **Front-end Active Array Technology for Multi-function Phased-Array Radar Systems**, invited talk at The Antenna group at the U.S. Navy Research Laboratory, VA.

Nov. 19, 2018
- **Front-end Active Array Technology for Multi-function Phased-Array Radar Systems**, invited talk at The Antenna group at the U.S. Airforce Research Laboratory (AFRL), VA.

Invited Talks & Short courses (continued)

May 31, 2017
- **State of the Art Platforms for Modern Multi-function Phased Array Weather Radars**, Invited talk at the Earth Observing Laboratory (EOL) 2017 Engineering and Scientist Seminar. National Center for Atmospheric Research (NCAR), Boulder CO.

May 08, 2014
- **Airborne Atmospheric Radar Using Phased Array Antenna Technology**, Invited talk at the 2014 ECE seminar series at the University of Puerto Rico Mayaguez (UPRM), Mayaguez, PR.
- **Special Design Considerations and Trade-offs for an Airborne Atmospheric Radar Using Phased Array Antenna Technology**, Invited talk at The University of Oklahoma, Norman, OK.

May 09, 2014
- **Special Design Considerations and Trade-offs for an Airborne Atmospheric Radar Using Phased Array Antenna Technology**, Invited talk The National Severe Storm Laboratory (NSSL), Norman, OK.

Dec. 06, 2013
- **Technical Design Trade-offs for Dual-Polarized Active Phased Array Radars for Atmospheric Research**, Invited talk at FirstRF seminar series, Boulder, CO.

Feb. 06, 2013
- **A Drop Size Distribution (DSD) Based Model for Evaluating the Performance of Wet Radomes for Dual-Polarized Radars**, Invited talk at the Earth Observing Laboratory (EOL) Engineering and Scientist Seminar. National Center for Atmospheric Research (NCAR), Boulder CO.

July 01, 2008
- **CASA phased array radar system for weather meteorological applications**, Invited talk at the 2008 IEEE INTERCON, Trujillo, Peru.

Invited Short Courses:

2019
- **Phased Array Antennas and Calibration**, 2019 AMS Radar Conference at Tokio, Japan.

2018
- **New Trends in Phased Array Antennas and Calibration**, 2018 IEEE Radar Conference at Oklahoma City, OK.

2015
- **Dual-Polarized Phased Array Antennas for Weather Radars**, 2015 AMS Radar Conference at Norman, OK.

Publications

Journal Articles

1. Diaz, J., Aboserwal, N. & Salazar, J. L. (2019a). An Ultra Low Cross Polarization Microstrip Patch Antenna (*Paper under revision*). *IEEE Transactions on Antennas and Propagation.*
2. Diaz, J., Aboserwal, N. & Salazar, J. L. (2019b). Dual Polarization Phased Array with Ultra Low Cross Polarization (*Paper under revision*). *IEEE Transactions on Antennas and Propagation.*
3. Ortiz, J., Aboserwal, N. & Salazar, J. (2019). Impac of Edge Difraction of Dula Polarization Phased Array (*Paper in revision process*). *IEEE Transactions on Antennas and Propagation.*
4. Ortiz, J., Salazar, J., Diaz, J., Lebron, R. & Aboserbal, N. (2019). Low Cost CMOS Active Array Solution for Highly Dense X-Band Weather Radar Network (*Paper in printing process*). *IEEE Transactions on Antennas and Propagation.*

5. Ortiz, J., Umeyama, A. & Salazar, J. (2019). High Cross -Polarization Antenna Design Considerations for a UAV Base Measurements System (*Paper in revision process*). *IEEE Transactions on Antennas and Propagation*.

6. Qamar, Z., N.Aboserwal & Salazar, J. L. (2019). High Performance Radome for mm-Wave Applications: Modeling and Design (*Paper under revision*). *IEEE Transactions on Antennas and Propagation*.

7. Salazar, J. L., Lebron, R., Palmer, N., Cheong, B., Fultons, C., Isom, B. & Yeary, M. (2019). A Fast E-scann Polarimetric Image Phased Array Radar for Atmospheric Research (*Paper under revision*). *IEEE Transactions on Antennas and Propagation*.

8. Salazar, J. L., Lebron, R., Qamar, Z., Brachtenbach, T. & Constien, K. (2019). A Novel 9-axis MultiPurpose RF Scanner for mm-Wave Applications (*Paper under revision*). *IEEE Transactions on Antennas and Propagation*.

9. Salazar, J. L., Qamar, Z., Sharok, S., Weng, B. & Sigmarsson, H. (2019). Frequency Agile Microstrip Antenna Using an Anisotropic Artificial Dielectric Layer (AADL): Modeling and designing (*Paper under revision*). *IEEE Transactions on Antennas and Propagation*.

10. Salazar, J. L., Yu, T., Palmer, R., Cheong, B., Fultons, C., Isom, B. & Yeary, M. (2019). A Fast E-scann Polarimetric Image Phased ArrayRadar for Atmospheric Research (*Paper under revision*). *IEEE Transactions on Antennas and Propagation*.

11. Umeyama, A., Mirkovic, M., Duthoit, S., Salazar, J. & C.Fulton. (2019). Unmanned Aerial Vehicle (UAV)-Based Calibration of Polarimetric Phased Array Weather Radar Systems (*Paper under revision*). *IEEE Transactions on Antennas and Propagation*.

12. Umeyama, A., Salazar, J. & C.Fulton. (2019a). Effects of the UAV Frame on the Antenna Radiation Patterns(*Paper under revision*). *IEEE Transactions on Antennas and Propagation*.

13. Umeyama, A., Salazar, J. & C.Fulton. (2019b). Recommendations for UAV-Based Antenna Range Design (*Paper under revision*). *IEEE Transactions on Antennas and Propagation*.

14. Mancini, A., Lebrón, R. M. & Salazar, J. L. (2019). The impact of a wet *s* -band radome on dual-polarized phased-array radar system performance. *IEEE Transactions on Antennas and Propagation*, *67*(1), 207–220. doi:10.1109/TAP.2018.2876733

15. Chilson, P., Bell, T., Brewster, K., Hupsel de Azevedo, G., Carr, F., Carson, K., … Droegemeier, K. (2019). Moving Towards a Network of Autonomous UAS Atmospheric Profiling Stations for Observations in the Earth's Lower Atmosphere: The 3D Mesonet Concept. *MDPI Sensors*. doi:DOI:10.3390/s19122720. eprint: https://www.ncbi.nlm.nih.gov/pubmed/31213000

16. Díaz, J. D., Salazar-Cerreno, J. L., Ortiz, J. A., Aboserwal, N. A., Lebrón, R. M., Fulton, C. & Palmer, R. D. (2018). A cross-stacked radiating antenna with enhanced scanning performance for digital beamforming multifunction phased-array radars. *IEEE Transactions on Antennas and Propagation*, *66*(10), 5258–5267. doi:10.1109/TAP.2018.2862252

17. Aboserwal, N. A., Salazar, J. L., Ortiz, J. A., Díaz, J. D., Fulton, C. & Palmer, R. D. (2018). Source current polarization impact on the cross-polarization definition of practical antenna elements: Theory and applications. *IEEE Transactions on Antennas and Propagation*, *66*(9), 4391–4406. doi:10.1109/TAP.2018.2845945

18. Mancini, A., Salazar, J. L., Lebrón, R. M. & Cheong, B. L. (2018a). A novel instrument for real-time measurement of attenuation of weather radar radome including its outer surface. part i: The concept. *Journal of Atmospheric and Oceanic Technology*, *35*(5), 953–973. doi:10.1175/JTECH-D-17-0083.1. eprint: https://doi.org/10.1175/JTECH-D-17-0083.1

19 Mancini, A., Salazar, J. L., Lebrón, R. M. & Cheong, B. L. (2018b). A novel instrument for real-time measurement of attenuation of weather radar radome including its outer surface. part ii: Applications. *Journal of Atmospheric and Oceanic Technology*, *35*(5), 975–991. doi:10.1175/JTECH-D-17-0084.1. eprint: https://doi.org/10.1175/JTECH-D-17-0084.1

20 Fulton, C., Salazar, J. L., Zhang, Y., Zhang, G., Kelly, R., Meier, J., … Palmer, R. D. (2017). Cylindrical polarimetric phased array radar: Beamforming and calibration for weather applications. *IEEE Transactions on Geoscience and Remote Sensing*, *55*(5), 2827–2841. doi:10.1109/TGRS.2017.2655023

21 Salazar-Cerreño, J. L., Chandrasekar, V., Trabal, J. M., Siquera, P., Medina, R., Knapp, E. & McLaughlin, D. J. (2014). A drop size distribution (dsd)-based model for evaluating the performance of wet radomes for dual-polarized radars. *Journal of Atmospheric and Oceanic Technology*, *31*(11), 2409–2430. doi:10.1175/JTECH-D-13-00208.1. eprint: https://doi.org/10.1175/JTECH-D-13-00208.1

22 Vivekanandan, J., Lee, W.-C., Loew, E., Salazar, J. L., Grubišić, V., Moore, J. & Tsai, P. (2014). The next generation airborne polarimetric doppler weather radar. *Geoscientific Instrumentation, Methods and Data Systems*, *3*(2), 111–126. doi:10.5194/gi-3-111-2014

Conference Proceedings

1 Lebrón, R., DÍaz, J. D. & Salazar-Cerreno, J. L. (2018). A procedure to characterize and predict active phased array antenna radiation patterns from planar near-field measurements. In *2018 amta 2018 proceedings* (pp. 1–4).

2 Salazar, J. L., Umeyama, A., Duthoit, S. & Fulton, C. (2018). Uas-based antenna pattern measurements and radar characterization. In *2018 ieee conference on antenna measurements applications (cama)* (pp. 1–4). doi:10.1109/CAMA.2018.8530587

3 Duthoit, S., Salazar, J. L., Doyle, W., Segales, A., Wolf, B., Fulton, C. & Chilson, P. (2017a). A new approach for in-situ antenna characterization, radome inspection and radar calibration, using an unmanned aircraft system (uas). In *2017 ieee radar conference (radarconf)* (pp. 0669–0674). doi:10.1109/RADAR.2017.7944287

4 Duthoit, S., Salazar, J. L., Doyle, W., Segales, A., Wolf, B., Fulton, C. & Chilson, P. (2017b). A new approach for in-situ antenna characterization, radome inspection and radar calibration, using an unmanned aircraft system (uas). In *2017 ieee radar conference (radarconf)* (pp. 0669–0674). doi:10.1109/RADAR.2017.7944287

5 Mancini, A., Salazar, J. L., Lebrón, R. M. & Cheong, B. L. (2017). A novel technique to characterize the effect of rain over a radome for radar applications. In *2017 ieee radar conference (radarconf)* (pp. 0470–0475). doi:10.1109/RADAR.2017.7944249

6 Aboserwal, N. A., Salazar, J. L. & Fulton, C. (2016). Current polarization impact on cross-polarization definitions for practical antenna elements. In *2016 ieee international symposium on phased array systems and technology (past)* (pp. 1–5). doi:10.1109/ARRAY.2016.7832550

7 Díaz, J. D., Salazar, J. L., Ortiz, J. A., Fulton, C., Aboserwal, N., Kelley, R. & Palmer, R. (2016). A dual-polarized cross-stacked patch antenna with wide-angle and low cross-polarization for fully digital multifunction phased array radars. In *2016 ieee international symposium on phased array systems and technology (past)* (pp. 1–4). doi:10.1109/ARRAY.2016.7832546

8 Lebrón, R. M., Salazar, J. L., Fulton, C., Duthoit, S., Schmidt, D. & Palmer, R. (2016). A novel near-field robotic scanner for surface, rf and thermal characterization of millimeter-wave active phased array antenna. In *2016 ieee international symposium on phased array systems and technology (past)* (pp. 1–6). doi:10.1109/ARRAY.2016.7832657

9 Ortiz, J. A., Díaz, J., Aboserwal, N., Salazar, J. L., Jeon, L., Sim, S. & Chun, J. (2016). Ultra-compact universal polarization x-band unit cell for high-performance active phased array radar. In *2016 ieee international symposium on phased array systems and technology (past)* (pp. 1–5). doi:10.1109/ARRAY.2016.7832592

10 Salazar, J. L., Aboserwal, N., Díaz, J. D., Ortiz, J. A. & Fulton, C. (2016). Edge diffractions impact on the cross polarization performance of active phased array antennas. In *2016 ieee international symposium on phased array systems and technology (past)* (pp. 1–5). doi:10.1109/ARRAY.2016.7832571

11 Salazar, J. L., Medina, R. H. & Loew, E. (2015a). T/r modules for active phased array radars. In *2015 ieee radar conference (radarcon)* (pp. 1125–1133). doi:10.1109/RADAR.2015.7131163

12 Salazar, J. L., Medina, R. H. & Loew, E. (2015b). Transmit/receive (t/r) modules architectures for dual-polarized weather phased array radars. In *2015 ieee mtt-s international microwave symposium* (pp. 1–4). doi:10.1109/MWSYM.2015.7167077

13 Gál, T., Salazar-Cerreno, J. L., Farquharson, G. & Kuga, Y. (2014a). Design of a c-band conformal series-fed phased-array antenna for airborne synthetic aperture radar. In *2014 usnc-ursi radio science meeting (joint with ap-s symposium)* (pp. 97–97). doi:10.1109/USNC-URSI.2014.6955479

14 Gál, T., Salazar-Cerreno, J. L., Farquharson, G. & Kuga, Y. (2014b). Design of a c-band conformal series-fed phased-array antenna for airborne synthetic aperture radar. In *2014 usnc-ursi radio science meeting (joint with ap-s symposium)* (pp. 97–97). doi:10.1109/USNC-URSI.2014.6955479

15 Vivekanandan, J., Lee, W., Loew, E. & Salazar, J. L. (2014). The next generation airborne polarimetric doppler weather radar.

16 Salazar, J. L., Loew, E., Tsai, P., Vivekanandan, J., Lee, W. C. & Chandrasekar, V. (2013). Design trade-offs for airborne phased array radar for atmospheric research. In *2013 ieee international symposium on phased array systems and technology* (pp. 371–378). doi:10.1109/ARRAY.2013.6731857

17 Medina, R. H., Salazar, J. L., Knapp, E. J. & McLaughlin, D. J. (2012a). Calibration and validation of the casa phased array antenna. In *2012 42nd european microwave conference* (pp. 940–943). doi:10.23919/EuMC.2012.6459314

18 Medina, R. H., Salazar, J. L., Knapp, E. J. & McLaughlin, D. J. (2012b). Calibration and validation of the casa phased array antenna. In *2012 9th european radar conference* (pp. 614–617).

19 Salazar, J. L., Medina, R. H., Knapp, E. J. & McLaughlin, D. J. (2012a). Low cost x-band dual polarization phased array antenna: Scanning performance. In *2012 42nd european microwave conference* (pp. 751–754). doi:10.23919/EuMC.2012.6459126

20 Salazar, J. L., Medina, R. H., Knapp, E. J. & McLaughlin, D. J. (2012b). Low cost x-band dual polarization phased array antenna: Scanning performance. In *2012 42nd european microwave conference* (pp. 751–754). doi:10.23919/EuMC.2012.6459126

21 Salazar, J. L., Siquiera, P., Trabal, J., Knapp, E. J. & McLaughlin, D. J. (2012a). Performance of the wet radomes for phased-array weather radars: Evaluation and applications. In *2012 9th european radar conference* (pp. 341–344).

22 Salazar, J. L., Siquiera, P., Trabal, J., Knapp, E. J. & McLaughlin, D. J. (2012b). A concept for evaluating the performance of wet radomes for phased-array weather radars. In *2012 ieee international geoscience and remote sensing symposium* (pp. 6903–6906). doi:10.1109/IGARSS.2012.6352576

23 Frasier, S. J., Venkatesh, V., Orzel, K., Hartley, T., Salazar, J., Medina, R., … Tanamachi, R. (2011). X- and w-band mobile doppler radar observations from vortex2 and current developments. In *2011 ieee radarcon (radar)* (pp. 774–777). doi:10.1109/RADAR.2011.5960642

24 Orzel, K., Venkatesh, V., Palumbo, R. A., Medina, R., Salazar, J., Krishnamurthy, A., … Frasier, S. J. (2011). Mobile x-band dual polarization phased array radar : System requirements and development.

25 Salazar, J. L., Knapp, E. J. & McLaughlin, D. J. (2010). Dual-polarization performance of the phase-tilt antenna array in a casa dense network radar. In *2010 ieee international geoscience and remote sensing symposium* (pp. 3470–3473). doi:10.1109/IGARSS.2010.5650310

26 Hopf, A. P., Salazar, J. L., Medina, R., Venkatesh, V., Knapp, E. J., Frasier, S. J. & McLaughlin, D. J. (2009). Casa phased array radar system description, simulation and products. In *2009 ieee international geoscience and remote sensing symposium* (Vol. 2, pp. II-968-II-971). doi:10.1109/IGARSS.2009.5418262

27 Salazar, J. L., Hopf, A., Contreras, R. F., Philips, B., Knapp, E. J., McLaughlin, D., … Brewster, K. (2009a). Coverage comparison of short range radar networks vs. conventional weather radars: Case study in the northwestern united states. In *2009 ieee international geoscience and remote sensing symposium* (Vol. 2, pp. II-964-II-967). doi:10.1109/IGARSS.2009.5418261

28 Salazar, J. L., Hopf, A., Contreras, R. F., Philips, B., Knapp, E. J., McLaughlin, D., … Brewster, K. (2009b). Coverage comparison of short range radar networks vs. conventional weather radars: Case study in the northwestern united states. In *2009 ieee international geoscience and remote sensing symposium* (Vol. 2, pp. II-964-II-967). doi:10.1109/IGARSS.2009.5418261

29 Salazar, J. L., Medina, R., Knapp, E. J. & McLaughlin, D. J. (2008). Phase-tilt array antenna design for dense distributed radar networks for weather sensing. In *Igarss 2008 - 2008 ieee international geoscience and remote sensing symposium* (Vol. 5, pp. 318–321). doi:10.1109/IGARSS.2008.4780092

30 Salazar, J. L., Knapp, E. A. & McLaughlin, D. W. (2007). Antenna design trade-offs for dense distributed radar network for weather sensing.

31 Salazar-Cerreno, J. & Rodriguez-Solis, R. A. (2003). Broadband log-periodic normal mode helical antenna. In *Ieee antennas and propagation society international symposium. digest. held in conjunction with: Usnc/cnc/ursi north american radio sci. meeting (cat. no.03ch37450)* (Vol. 1, 249–252 vol.1). doi:10.1109/APS.2003.1217445