

SEMBIAM R. RENGARAJAN



Professor and Chair
Department of Electrical and Computer Engineering
California State University, Northridge, CA 91330
818-677-2190 (work)
srengarajan@csun.edu

Ph.D.: 1980, Electrical Engineering, University of New Brunswick, Canada.
Dissertation: A Study of Multi-Media Elliptical Waveguides.
M. Tech: 1974, Electrical Engineering, Indian Institute of Technology, India.
BE (Honors): 1971, Electrical Engineering, University of Madras, India.

Professional Experience

Chair, Department of Electrical and Computer Engineering, California State University, Northridge (CSUN), Aug. 2018-present.
Professor, CSUN, 1987-present.
Associate Professor, CSUN, 1983-1987.
Assistant Professor, CSUN, 1980-1983.
Guest Professor, Technical University of Denmark, spring 1999.
Senior Research Fellow, Naval Research Lab., Washington, D.C., summer 1998.
Visiting Professor, University of Pretoria, South Africa, summer 1997.
Visiting Professor, Universidad de Santiago de Compostela, Spain, 1996.
AFOSR Summer Faculty Fellow, Rome Lab., Hanscom Air Force Base, MA, 1995.
Guest Researcher, Chalmers University of Technology, Sweden, summer 1990.
Visiting Professor, University of California, Los Angeles, 1987-88.
Visiting Researcher, UCLA, 1984-1993.
Member of the Technical Staff, NASA/Jet Propulsion Laboratory, Pasadena, CA, 1983-84.
Antenna Engineer, Bharat Electronics Ltd., India, 1971-72, 74-76.

Consultant: HRL Laboratories June 2012-Aug. 2013, June-Dec. 2015, June 2019-present
NASA/Jet Propulsion Laboratory, Caltech, 1987-90, 1992-94, 96-97, 99-2012, 2016.
URS Alaska, 2010.
Lockheed Martin Co., 1995, 1996-97.
S.T. Research Corporation, Virginia, 1994-95.
United Nations Development Program, India, summer 1993.
Ericsson Radar Electronics, Sweden / European Space Agency, 1990-92.
Rantec Corporation, Calabasas, CA, 1989.
Hughes Aircraft Company, Canoga Park, CA, 1982-86.

Research Interests

Prior work on analytical and numerical techniques in electromagnetics with applications to antennas, scattering, and passive microwave components have resulted in 240 journal articles and conference papers.

Professional Service

- United States National Committee of the International Union of Radio Science (USNC-URSI), Chair (2018-), Secretary and Chair-Elect (2015-2017), Commission B Chair (2012-14), Vice-Chair (2009-11), Secretary (2003-08).
- Chair, Local Organizing Committee, URSI International Symposium on Electromagnetic Theory, San Diego, CA, May 2019.
- Member, Technical Activities Board, International URSI Commission B (2014-)
- Member, Editorial Board, International Journal of Antennas and Propagation (open access) (2012-14)

- Member, Editorial Board, International Journal for Computed Aided RF and Microwave Engineering (Wiley) (2014-)
- Associate Editor, IEEE Transactions on Antennas and Propagation (2000-2003)
- Associate Editor, IEEE Antennas and Propagation Magazine (1999-2002).
- Chair, Education Committee, IEEE Antennas and Propagation Society (1999-2002), Member (2003-present).
- Member, International Union of Radio Science (URSI).
- IEEE AP-S Los Angeles Chapter: Chairman (1983-84), Vice Chairman (1982-83), Secretary/Treasurer (1981-82). San Fernando Valley Section, Vice-chair, 1994, Chair, 1995.
- Member of the Steering Committee (Publicity Chair), 1995 IEEE International Antennas and Propagation Symposium and National Radio Science Meeting, Newport Beach, CA.
- Secretary, United States National Committee of the International Union of Radio Science, Commission B (2003-2008). Vice-Chair (2009-2011), Chair (2012-14).
- Reviewer to *Radio Science*, *IEEE Trans. Antennas and Propagation*, *IEEE Trans. Microwave Theory Tech.*, *Journal of Electromagnetic Waves and Applications*, *Canadian Journal of Electrical and Computer Engineering*, *Proc. IEEE Microwaves Antennas and Propagation (U.K.)*, *ACES Journal*, *Electronics Letters (U.K.)*, *Nature Materials* etc.
- Chaired numerous technical sessions in IEEE AP-S, URSI and PIERS Symposia.
- Chair of the Technical Program Committee, IEEE International Phased Array Systems and Technology Conference, Dana Point, CA, May 2000.
- Guest Editor, Special Issue on Slot Antennas and Arrays in Electromagnetics, 1998.
- Topical Area Editor (Antennas), URSI Commission B Radio Science Review (1995-1998).
- Reviewed antenna research in the USA (1986-1989) for USNC/URSI Commission B (invited).

Awards and Honors

- *Life Fellow*, IEEE, 2014
- Elected *Fellow*, IEEE, Antennas and Propagation and Microwave Theory and Techniques Societies, 1994
- Distinguished Lecturer, IEEE AP Society, 2011-13.
- US Delegate to the URSI General Assembly and Scientific Symposium, Montreal, Canada, Aug. 2017.
- CSUN Research Fellow award, 2010
- Preeminent Scholarly Publication Award, California State University, Northridge, CA 2005.
- Distinguished Engineering Educator of the year award, Engineers' Council, CA, 1995.
- 13 Certificates of Recognition from NASA for innovation in research work on reflector antennas, beam waveguides, microstrip reflectarrays, and waveguide-fed slot arrays 1991, 92, 96, 2010, 2011, 2012.
- 3 Awards from NASA's Inventions and Contributions Board, 2010.
- Technical Excellence Award for Antenna Research in Advanced Second Generation Precipitation Radar Project, Jet Propulsion Laboratory, 2002.
- IEEE San Fernando Valley Section Distinguished Service Award, 2001.
- Outstanding Faculty Award, School of Engineering and Computer Science, Calif. State University, 1985.

BOOKS and BOOK CHAPTERS

L. Josefsson and S. R. Rengarajan, Slotted Waveguide Array Antennas, Mario Boella Series on Information & Communication, Sci Tech/IET, London UK, July 2018.

R. J. Mailloux, S. R. Rengarajan, and Z. Sipus, "Conformal and Low Profile Antennas" in Antenna Engineering Handbook (J. Volakis, Ed.), V Edition, McGraw Hill, 2018.

W. O. Williamson and S. R. Rengarajan, "Genetic Algorithms," a chapter in the Handbook of Wireless Antennas, (Lal Godera, Editor) CRC Press, 2001.

JOURNAL ARTICLES

S. R. Rengarajan, "On the Galerkin Technique for Evaluating the Conductor Loss in Microstrip Reflectarrays," Forum for Electromagnetic Research Methods and Application Technologies, vol. 39, Article 1, May-June 2020.

S. R. Rengarajan and R. E. Hodges, "Accurate Evaluation of the Conductor Loss in Rectangular Microstrip Patch Reflectarrays," Progress in Electromagnetics Research M, vol. 75, 159-166, 2018.

- J. Pawlan, K. Solbach, and S. R. Rengarajan, "Design of Highly Omnidirectional Horizontally Polarized Antennas for 10GHz using a Waveguide Structure with an Array of Slot Pairs," DUBUS Magazine, vol. 47, no.2, pp. 8-29, 2017.
- S. R. Rengarajan, and C. R. White, "Stability Analysis of Artificial Magnetic Conductors Periodically Loaded with Non-Foster Circuits," IEEE Antennas and Wireless Propagation Letters, vol. 15, pp. 1426-1429, 2016.
- S. R. Rengarajan, and J. Lynch, "Design of High Efficiency Traveling Wave Power Combiners," IEEE Transactions on Microwave Theory and Techniques, vol. 63, pp. 3981-3987, Dec. 2015.
- S. R. Rengarajan, and C. R. White, "Stability Analysis of Superluminal Waveguides Periodically Loaded with Non-Foster Circuits," IEEE Antennas and Wireless Propagation Letters, vol. 12, pp. 1303-1306, 2013.
- S. R. Rengarajan, "Genetic Algorithm Optimization of a Planar Slot Array Using Full Wave Method of Moments Analysis," International Journal of Computer Aided RF and Microwave Engineering, vol. 23, Issue 4, pp. 430-436, July 2013.
- S. R. Rengarajan, "Reflectarrays of Rectangular Microstrip Patches for Dual-Polarization Dual-Beam Radar Interferometers," Progress in Electromagnetics Research, vol. 133, pp. 1-15, 2013.
- S. R. Rengarajan, "Improved Design procedure for Waveguide-Fed Slot Arrays Using the Method-of-Moments Analysis," Electromagnetics, vol. 32, pp. 221-232, April 2012.
- S. R. Rengarajan, "Excitation of a Parallel Plate Waveguide by an Array of Rectangular Waveguides," Electromagnetics, vol. 31, pp. 101-116, Feb. 2011.
- S. R. Rengarajan, M. S. Zawadzki and R. E. Hodges, "Waveguide Array Antenna for Radiometer Applications," IEEE Antennas and Propagation Magazine, Dec. 2010.
- S. R. Rengarajan, "Scanning and Defocusing Characteristics of Microstrip Reflectarrays," IEEE Antennas and Wireless Propagation Letters, vol. 9, pp. 163-166, 2010.
- S. R. Rengarajan, "Reciprocity Considerations in Microstrip Reflectarrays," IEEE Antennas and Wireless Propagation Letters, vol. 8, pp. 1206-1209, 2009.
- S. R. Rengarajan, and S. Chatterjee, "An Investigation of Bandwidth Characteristics of Waveguide-Fed Planar Slot Arrays," Electromagnetics, vol. 29, no. 7, pp. 515-521, 2009.
- S. R. Rengarajan, M. S. Zawadzki and R. E. Hodges, "Design, Analysis and Development of a Large Ka Band Slot Array for Digital Beamforming Application," IEEE Transactions on Antennas and Propagation, vol. 57, no. 10, pp. 3103-3109, Oct. 2009.
- S. R. Rengarajan, "Coupling Between Waveguide-Fed Slot Arrays," IEEE Antennas and Wireless Propagation Letters, vol. 8, pp. 428-431, 2009.
- S. R. Rengarajan, "An Optimization Procedure for Including the Higher Order Mode Coupling Between Coupling Slots in the Design of a Planar Slot Array," IEEE Antennas and Wireless Propagation Letters, vol. 7, pp. 785-787, 2008.
- A. Jensen and S. R. Rengarajan, "Genetic Algorithm Optimization of a Traveling Wave Array of Longitudinal Slots in a Rectangular Waveguide," Applied Computational Electromagnetics Society Journal vol. 21, no. 3, pp. 337-341, Nov. 2006.
- S. R. Rengarajan, "Choice of Basis Functions for Accurate Characterization of Infinite Array of Microstrip Reflectarrays," IEEE Antennas and Wireless Propagation Letters, vol. 4, no. 4, pp. 47-50, April 2005.

- J. Appel-Hansen and S. R. Rengarajan, "Matching of Equivalent field regions," IEEE Antennas and Propagation Magazine, vol. 47, no.1, pp. 56-61, Feb. 2005.
- S. R. Rengarajan, and Y. Rahmat-Samii, "The Field Equivalence Principle: Illustration of the Establishment of the Non-intuitive Null Fields," IEEE Antennas and Propagation Magazine, vol. 42, no. 4, pp. 122-128, Aug. 2000, errata vol. 43, p. 134, Feb. 2001.
- M. Dich, and S. R. Rengarajan, "The Self-Impedance of a Waveguide-Fed Transverse Broad Wall Slot Radiating Between Baffles," Electromagnetics, vol. 19, no. 4, Jul.-Aug. 1999.
- F. J. Ares-Pena, J. A. Rodriguez-Gonzalez, E. Villanueva-Lopez, and S. R. Rengarajan, "Genetic Algorithms in the Design and Optimization of Antenna Array Patterns," IEEE Transactions on Antennas and Propagation, vol. 47, no. 3, pp. 506-510, Mar. 1999.
- S. R. Rengarajan, L. G. Josefsson, and R. S. Elliott, "Waveguide-Fed Slot Antennas and Arrays: A Review," Electromagnetics, vol. 19, no. 1, pp. 3-22, Jan.-Feb. 1999.
- S. R. Rengarajan, "Impedance Matching of Microstrip Patch Antenna Arrays over Wide Scan Angles," Microwave and Optical Technology Letters, vol. 19, no. 4, pp. 252-255, Nov. 1998.
- S. R. Rengarajan, and V. Jamnejad, "Review of Antenna Engineering Using Physical Optics," IEEE Antennas and Propagation Magazine, vol. 39, no. 6, pp. 67-68, Dec. 1997.
- M. Dich, and S. R. Rengarajan, "Mutual Coupling Between Waveguide-Fed Transverse Broad Wall Slots Radiating Between Baffles," Electromagnetics, vol. 17, no. 5, pp. 421-435, Sep. - Oct., 1997.
- J. Joubert, and S. R. Rengarajan, "Design of Unequal H-plane Waveguide Power Dividers," Microwave Journal vol. 40, no. 2, pp. 24-34, Feb. 1997.
- Y. Yaccarino, and S. R. Rengarajan, "A Comparison of Two Forms of Spherical Wave Expansions," Electromagnetics, vol. 17, no. 1, pp. 75-87, Jan. - Feb., 1997 .
- F. Ares, S. R. Rengarajan, A. Vieiro, and E. Moreno, "Extension of Orchard's Pattern Synthesis Technique for Overdetermined Systems," Electromagnetics, vol. 17, no. 1, pp. 15-23, Jan. - Feb., 1997.
- S. R. Rengarajan, "Mutual Coupling Between Waveguide-Fed Longitudinal Broad Wall Slots Radiating Between Baffles," Electromagnetics, vol. 16, no. 6, pp. 671-683, Nov. - Dec., 1996.
- S. R. Rengarajan, "Mutual Coupling Between Slots Cut in Rectangular Cylindrical Structures: Spectral Domain Analysis," Radio Science, vol. 31, pp. 1651-1661, Nov. - Dec., 1996.
- F. Ares, S. R. Rengarajan, J. A. Rodriguez, and E. Moreno, "Optimal Compromise Among Sum and Difference Patterns," Journal of Electromagnetic Waves and Applications, vol. 10, pp. 1541-1553, 1996.
- F. Ares, S. R. Rengarajan, J. A. F. Lance, A. Trastoy, and E. Moreno, "Synthesis of Antenna Patterns of Circular Arc Arrays," Electronics Letters, vo. 32, no. 20, pp. 1845-1846, 26 Sep. 1996.
- F. Ares, S. R. Rengarajan, A. Vieiro, E. Botha, and E. Moreno, "An Improved Planar Array Pattern Synthesis for Space Communications Applications," Microwave and Optical technology Letters, vol. 12, pp. 263-265, Aug. 1996.
- P.-S. Kildal, S. R. Rengarajan, and A. Moldsvær, "Analysis of Nearly Cylindrical Antennas Using a Spectrum of Two-Dimensional Solutions," IEEE Trans. Antennas Propagat., vol. 44, no. 8, pp. 1183-1192, Aug. 1996 .
- F. Ares, S. R. Rengarajan, and E. Moreno, "Remarks on Comparison Between Real and Power Optimisation Methods for Arrays Synthesis of Antennas," Electronics Letters, vol. 32, no.15, pp. 1338-1339, 18 July, 1996.

- F. Ares, S. R. Rengarajan, and E. Moreno, "Optimisation of Aperture Distributions for Sum Patterns," Electromagnetics, vol. 16, no. 2, pp. 129-143, Mar.-Apr. 1996.
- P. Cramer, W. Imbriale, and S. R. Rengarajan, "Focal Plane Analysis for Calculating Antenna Gain," NASA Tech. Briefs., vol. 20, no. 3, p. 42, March 1996.
- F. Ares, S. R. Rengarajan, A. Vieiro, and E. Moreno, "Optimisation of Aperture Distributions for Difference Patterns," Journal of Electromagnetic Waves and Applications, vol. 10, no. 3, pp. 383-402, Mar. 1996.
- F. Ares, S. R. Rengarajan, E. Villanueva, E. Skochinski, and E. Moreno, "Application of Genetic Algorithms and Simulated Annealing Technique in Optimizing the Aperture Distributions of Antenna Array Patterns," Electronics Letters, vol. 32, no. 3, pp. 148-149, Feb. 1996.
- S. R. Rengarajan, "Further Comments on Analysis of Wide Inclined Slot Coupled Narrow Wall Coupler Between Dissimilar Rectangular Waveguides," IEEE Trans. Microwave Theory Tech., vol. 43, no. 8, pp. 1995-1996, Aug. 1995.
- S. R. Rengarajan, A. Lyerly, and Villaseca, E., "Equivalent Edge Current Technique for Reflector Antenna Pattern in the Boresight Caustic Region," Microwaves and Optical Technology Letters, vol. 8, pp. 253-257, April 95.
- S. R. Rengarajan, "Comments on Analysis of Wide Inclined Slot Coupled Narrow Wall Coupler Between Dissimilar Rectangular Waveguides," IEEE Trans. Microwave Theory Tech., vol. 43, no. 1, pp. 240-241, Jan. 1995.
- S. R. Rengarajan, and G. M. Shaw, "Accurate Characterization of Coupling Junctions in Waveguide-Fed Planar Slot Arrays," IEEE Trans. Microwave Theory Tech., vol. 42, no. 12, pp. 2239-2248, Dec. 1994.
- S. R. Rengarajan, and R. S. Elliott, "Broad Wall Slots Coupling into Butt-Ended Waveguides," Microwave and Optical Technology Letters, vol. 7, no. 10, pp. 460-464, July 94.
- C. Peterson, and S. R. Rengarajan, "Rigorous Analysis of Weakly Excited Broadwall Slots," Electronics Letters, vol. 30, no. 12, pp. 921-922, June 1994.
- S. R. Rengarajan, "Spherical Wave Expansion Technique," Proc. IEE, vol. 140, no. 6, pt. H, Microwaves, Antennas and Propagation, pp. 511-512, Dec. 1993.
- S. R. Rengarajan, and M. Steinbeck, "Longitudinal Slots in Dielectric-Filled Rectangular Waveguides," Microwave and Optical Technology Letters, Vol. 6, no. 11, pp. 649-652, Sep., 1993.
- S. R. Rengarajan, "Program Computes Mutual Coupling in Slot Arrays," Microwaves and RF, pp. 105-108, Aug., 1993. Errata, p.13, Mar. 94.
- S. R. Rengarajan, and A. Derneryd, "Improved Scattering Model for Weakly Excited Compound Slots," Microwave and Optical Technology Letters, vol. 6, pp. 504-507, June 20, 1993.
- S. R. Rengarajan, "Resonance Frequency of Elliptical Microstrip Antennas," Electronics Letters, vol. 29, pp. 1066-1067, June 1993.
- K. Forooghi, P.-S. Kildal, and S. R. Rengarajan, "Admittance of a Longitudinal Slot Radiating Between Baffles Using a Spectrum of Two-Dimensional Solutions," IEEE Trans. Antennas Propagat., vol. 41, pp. 422-428, April 1993.
- S. R. Rengarajan, and A. Derneryd, "Application of Compound Coupling Slots in the Design of Shaped Beam Antenna Patterns," IEEE Trans. Antennas Propagat., vol. 41, pp. 59-65, Jan. 1993.

- S. R. Rengarajan, and E. Gabrelian, "Efficient and Accurate Evaluation of External Mutual Coupling Between Compound Broad Wall Slots," IEEE Trans. Antennas Propagat., vol. 40, no. 6, pp. 733-737, June 1992 .
- C. P. Espino, and S. R. Rengarajan, "On the Longitudinal Component of the Aperture Electric Field in a Weakly Excited Broad Wall Slot," Electronics Letters, vol. 28, no. 10, pp. 909-911, May 1992.
- E. Lier, Y. Rahmat-Samii, and S. R. Rengarajan, "Analysis of Rectangular and Elliptical Dielectric Feed Horns to Elliptical Reflector Antennas," IEEE Trans. Antennas Propagat., vol. 39, no. 11, pp. 1592-1597, Nov. 1991.
- E. Lier, S. R. Rengarajan, and Y. Rahmat-Samii, "Comparison Between Different Rectangular Horn Elements for Array Antenna Applications," Proc. IEE, vol. 138, pt. H, Microwaves, Antennas and Propagation, no. 4, pp. 283-288, Aug. 1991
- V. Galindo-Israel, S. R. Rengarajan, W. Imbriale, R. and Mittra, "Offset Dual Shaped Reflectors for Dual Chamber Compact Ranges," IEEE Trans. Antennas Propagat., vol. 39, pp. 1007-1013, July 1991.
- S. R. Rengarajan, "Higher Order Mode Coupling Effects in Feeding Waveguide of a Planar Slot Array," IEEE Trans. Microwave Theory Tech., vol. 39, pp. 1219-1223, July 1991.
- R. Yaccarino, and S. R. Rengarajan, "Application of Spherical Wave Expansions to Reflector Antennas using Truncated Field Data," IEEE Trans. Antennas Propagat., vol. 39, no. 4, pp. 639-644, May 1991.
- S. R. Rengarajan, V. Galindo-Israel, and W. A. Imbriale, "Amplitude and Phase Shaping Effects in Beam Waveguides," IEEE Trans. Antennas Propagat., vol. 39, no. 4, pp. 687-690, May 1991.
- , Also appeared in NASA Tech. Briefs, vol. 16, July 1992.
- S. R. Rengarajan, and D. D. Nardi, "On Internal Higher-Order Mode Coupling in Slot Arrays," IEEE Trans. Antennas Propagat., vol. 39, no. 5, pp. 694-698, May 1991.
- S. R. Rengarajan, "Compound Broadwall Slots for Array Applications," IEEE Antennas Propagat. Magazine, vol. 32, no. 6, pp. 19-26, Dec. 1990.
- E. Lier, and S. R. Rengarajan, "Radiation From Elliptical Hybrid-Mode Waveguides," IEE Proceedings, vol. 137, pt. H., Microwaves, Antennas and Propagation, pp. 417-419, Dec. 1990.
- S. R. Rengarajan, "Scattering Characteristics of Centered-Inclined Slots in a Broad Wall of a Rectangular Waveguide," IEE Proceedings, vol. 137, pt. H., Microwaves, Antennas and Propagation, pp. 343-348, Dec. 1990.
- S. R. Rengarajan, "Compound Coupling Slots for Arbitrary Excitation of Waveguide-Fed Slot Arrays," IEEE Trans. Antennas Propagat., vol. AP-38, no. 2, pp. 276-280, Feb. 1990.
- V. Galindo-Israel, T. Veruttipong, S. R. Rengarajan, and W. A. Imbriale, "Inflection Point Caustic Problems and Solutions for High-Gain Dual-Shaped Reflectors," IEEE Trans. Antennas Propagat., vol. AP-38, no. 2, pp. 202-211, Feb. 1990.
- , Also appeared in NASA Tech. Briefs, vol. 15, no. 4, p. 38, April 1991.
- S. R. Rengarajan, "Compound Radiating Slots in a Broad Wall of a Rectangular Waveguide," IEEE Trans. Antennas Propagat., vol. AP-37, no. 9, pp. 1116-1124, Sep. 1989.
- S. R. Rengarajan, "Characteristics of a Longitudinal Transverse Coupling Slot in Crossed Rectangular Waveguides," IEEE Trans. Microwave Theory Tech., vol. MTT-37, no. 8, pp. 1171-1177, Aug. 1989.
- S. R. Rengarajan, "On Higher Order Mode Cut-Off Frequencies in Elliptical Step Index Fibers," IEEE Trans. Microwave Theory Tech., vol. MTT-37, no. 8, pp. 1244-1248, Aug. 1989.

S. R. Rengarajan, "Analysis of a Centered-Inclined Waveguide Slot Coupler," IEEE Trans. Microwave Theory Tech., vol. MTT-37, no. 5, pp. 884-889, May 1989.

S. R. Rengarajan, "Specular Points and Critical Gimbal Angles of Ogival Radomes," IEEE Trans. Antennas Propagat., vol. AP-36, no. 7, pp. 1023-1026, July 1988.

S. R. Rengarajan, and E. S. Gillespie, Jr., "Asymptotic Approximations in Radome Analysis," IEEE Trans. Antennas Propagat., vol. AP-36, no. 3, pp. 405-414, March 1988.

R. Y. Wong, and S. R. Rengarajan, "Optical Communication with Multilayer Elliptical Fibers," Optical Engineering, vol. 22, no. 3, pp. 382-384, May-June 1983.

S. R. Rengarajan, and J. E. Lewis, "Single Mode Propagation in Multilayer Elliptical Fiber Waveguides," Radio Science, vol. 16, no. 4, pp. 541-547, July-Aug. 1981.

S. R. Rengarajan, and J. E. Lewis, "The Elliptical Surface Wave Transmission Line," IEEE Trans. Microwave Theory Tech., vol. MTT-28, no. 10, pp. 1089-1095, Oct. 1980.

S. R. Rengarajan, and J. E. Lewis, "Dielectric Loaded Elliptical Waveguides," IEEE Trans. Microwave Theory Tech., vol. MTT-28, no. 10, pp. 1085-1089, Oct. 1980.

S. R. Rengarajan, and J. E. Lewis, "Propagation Characteristics of Elliptical Dielectric-Tube Waveguides," IEE Proceedings-H, Microwaves, Optics and Antennas, vol. 127, no. 3, pp. 121-126, June 1980.

S. R. Rengarajan, and J. E. Lewis, "First Higher-Mode Cutoff in Two-Layer Elliptical Fiber Waveguides," Electronics Letters, vol. 16, no. 7, pp. 263-264, Mar. 1980.

Also appeared in Progress in Optical Communication, vol. 2, P.J.B. Clarricoats (Ed), Peter Peregrinus Ltd. on behalf of IEE, U.K., pp. 11-12, 1983.

S. R. Rengarajan, and J. E. Lewis, "Mathieu Functions of Integral Orders and Real Arguments," IEEE Trans. Microwave Theory Tech., vol. MTT-28, no. 3, pp. 276-277, Mar. 1980.

S. R. Rengarajan, and J. E. Lewis, "Quality Factor of Elliptical Cylindrical Resonant Cavities," Journal of Microwave Power, vol. 15, no. 1, pp. 53-57, Mar. 1980.

S. R. Rengarajan, and J. E. Lewis, "Surface Impedance of Elliptical Hollow Conducting Waveguides," Electronics Letters, vol. 15, no. 20, pp. 637-639, Sep. 1979.

CONFERENCE PAPERS

Rengarajan, S. R., "Iterative Solution of Non-Linear Equations in the Design of Slot Arrays," URSI General Assembly and Scientific Symposium, Rome, Italy, Aug.-Sep., 2021.

Rengarajan, S. R., "Design of Waveguide-Fed Planar Slot Arrays with Venter-Fed Coupling Slots and Non-Symmetric Excitation in the E-Plane," IEEE Antennas and Propagation and USNC-URSI Radio Science Meeting, Montreal, Canada, July 2020.

Rengarajan, S. R., "Advances in Slotted Waveguide Array Antenna Technology," International Conference on Microwaves, Communications, Antennas & Electronic Systems, IEEE COMCAS, Tel Aviv, Israel, Nov. 2019 (invited).

Awadhwal, G., and S. R. Rengarajan, "CPW Fed Slotted Patch Antenna for UWB Applications," IEEE Antennas and Propagation and USNC-URSI Radio Science Meeting, Atlanta, GA, July 2019.

Rengarajan, S. R., "Optimization of Array Antenna Power Patterns Using Woodward-Lawson and Schelkunoff's Polynomial Techniques," IEEE Antennas and Propagation and USNC-URSI Radio Science Meeting, Atlanta, GA, July 2019.

Rengarajan, S. R., "A Study of Several Nature-Inspired Optimization Techniques," URSI Commission B Electromagnetic Theory Symposium, San Diego, CA, May 2019 (invited).

Rengarajan, S. R., "Slotted Waveguide Array Antenna Technology," Surface Deformation and Change Workshop, NASA Jet propulsion Laboratory, Pasadena, CA, May 20, 2019 (invited).

Gaxiola, S. and S. R. Rengarajan, "Nature Inspired Metaheuristic Optimization Algorithms and Applications," National Radio Science Meeting, Boulder, CO, Jan. 2019.

Rebollo, E. and S. R. Rengarajan, "Comparison of TLBO, DE, and BBO Algorithms for Applications in Electromagnetics," National Radio Science Meeting, Boulder, CO, Jan. 2019.

Poudel, U. and S. R. Rengarajan, "A Study of Firefly Algorithm, Ant Colony Optimization, and Artificial Bee Colony Algorithm," National Radio Science Meeting, Boulder, CO, Jan. 2019.

Rengarajan, S. R., "Accurate Evaluation of the Reflection Dyad for an Infinite Array of Microstrip Patches," IEEE International Antennas and Propagation and USNC URSI Radio Science Meeting, Boston, MA, July 2018.

Rengarajan, S. R., "Determination of the Conductor Loss in Microstrip Reflectarrays Using the Impedance Boundary Condition," Atlantic Radio Science Conference, AT-RASC, Gran Canaria, May 2018 (invited).

Rengarajan, S. R., "GA-MoM Optimization of Slot Arrays: A Review," Applied Computational Electromagnetics Society Conference, Denver, CO, Mar. 2018.

Rengarajan, S. R., and R. E. Hodges, "On the Conductor Loss in Microstrip Reflectarrays," National Radio Science Meeting, Boulder, CO, Jan. 2018.

Rengarajan, S. R., "Genetic Algorithm Optimization of Traveling Wave Slot Arrays Using Full Wave Method of Moments Analysis," URSI General Assembly and Scientific Symposium, Montreal, Canada, Aug. 2017.

Rengarajan, S. R., "Locating the Beam Pointing Direction Using a Few Probes," IEEE International Antennas and Propagation and USNC URSI Radio Science Meeting, San Diego, CA, July 2017.

S. R. Rengarajan, "Analysis of Antenna and Scattering Problems Using a Spectrum of Two-Dimensional Solutions: a Review," IEEE International Antennas and Propagation and USNC URSI Radio Science Meeting, San Diego, CA, July 2017.

Rengarajan, S. R., and J. Pawlan, "Array of Slot Pairs in a Rectangular Waveguide for Omnidirectional Radiation," National Radio Science Meeting, Boulder, CO, Jan. 2017.

Lingasamy, V., K. T. Selvan, and S. R. Rengarajan, "On the reflection phase characteristics of rectangular and circular reflectarray elements," The 15th Biennial Symposium on Antennas and Propagation, PSYM 2016, Cochin, India, Dec. 2016.

Rengarajan, S. R., and R. J. Pogorzelski, "Fourier Iteration Techniques in Antenna Measurement Applications with Limited Data," URSI Commission B International Symposium on Electromagnetic theory, Espoo, Finland, Aug. 2016.

Rengarajan, S. R., "Genetic Algorithm Optimization to Determine Beam Pointing Direction and Polarization Using

Limited Fresnel Region Measured Data," IEEE International Antennas and Propagation and USNC URSI Radio Science Meeting, San Juan, Puerto Rico, July 2016.

Kona, K. and S. R. Rengarajan, "Scanning Microstrip Arrays Using Controlled Mutual Reactances with Parasitic Elements," IEEE International Antennas and Propagation and USNC URSI Radio Science Meeting, San Juan, Puerto Rico, July 2016.

Rengarajan, S. R., and R. J. Pogorzelski, " Fourier Iteration between Antenna Aperture Plane and Measurement Plane with Limited Data," National Radio Science Meeting, Boulder, CO, Jan. 2016.

Rengarajan, S. R., and R. J. Pogorzelski, " Fourier Iteration between Antenna Aperture Plane and Measurement Plane with Limited Data," IEEE International Antennas and Propagation and North American Radio Science Meeting, Vancouver, Canada, July 2015.

Rengarajan, S. R., and J. Lynch, "Traveling Wave Slot Array Power Combiner at 74 GHz," Atlantic Radio Science Conference, AT-RASC, Gran Canaria, May 2015.

Rengarajan, S. R., "Improved Bandwidth Performance of Large Ka Band Slot Arrays for Space Based Interferometric Systems," URSI General Assembly and Scientific Symposium, Beijing, China, Aug. 2014.

Rengarajan, S. R., and R. J. Pogorzelski, "On the Gerchberg-Papoulis Algorithm for Extrapolating Antenna Patterns," IEEE International Antennas and Propagation and USNC URSI Radio Science Meeting, Memphis, TN, July 2014.

Rengarajan, S. R., and C. R. White, "Stability Analysis of Non-Foster Circuit Loaded Artificial Magnetic Conductors," National Radio Science Meeting, Boulder, CO, Jan. 2014.

Rengarajan, S. R., "Multi-Objective Optimization of Slot Array Antennas using Full Wave Moment Method Analysis," IEEE International Antennas and Propagation and USNC URSI Radio Science Meeting, Orlando, FL, July 2013.

Rengarajan, S. R., and C. R. White, "Stability Analysis of Transmission Lines Loaded with Non-Foster Circuits," IEEE International Antennas and Propagation and USNC URSI Radio Science Meeting, Orlando, FL, July 2013.

Rengarajan, S. R., "Improving Signal Integrity in Time Domain Measurements of Antenna Boresight Fields," Proc. URSI International Symposium on Electromagnetic Theory, Hiroshima, Japan, May 2013.

Rengarajan, S. R., "Far Field Extrapolation in the Boresight Direction from Near Field Samples to Improve the Signal Integrity in Time Domain Measurement," National Radio Science Meeting, Boulder, CO, Jan. 2013.

Rengarajan, S. R., "Scanning Properties of Faceted Reflectarrays," IEEE International Antennas and Propagation and USNC URSI Radio Science Meeting, Chicago, IL, July 2012.

Rengarajan, S. R., "Genetic Algorithm Optimization of a Slot Array with Full Wave Method-of-Moments Analysis," IEEE International Antennas and Propagation and USNC URSI Radio Science Meeting, Chicago, IL, July 2012.

Rengarajan, S. R., "A Study of Piecewise-Planar Parabolic Reflectarrays," National Radio Science Meeting, Boulder, CO, Jan. 2012.

S. R. Rengarajan, "Advances in Waveguide-Fed Slot Arrays," 33rd ESA Antenna Workshop, Noordwijk, the Netherlands, Oct. 2011.

Rengarajan, S. R., "Theory of a Traveling Wave Feed for a Planar Slot Array Antenna," XXX triennial International Union of Radio Science (URSI) General Assembly and Scientific Symposium, Istanbul, Turkey, Aug. 2011.

Rengarajan, S. R., "Investigation of Microstrip Reflectarrays for Non Broadside Beams," IEEE International

Antennas and Propagation and USNC URSI Radio Science Meeting, Spokane, WA, July 2011.

Rengarajan, S. R., M. S. Zawadzki, and R. E. Hodges, "Ka band slot array antenna for interferometric synthetic aperture radar topographic mapping mission," IEEE International Antennas and Propagation and USNC URSI Radio Science Meeting, Spokane, WA, July 2011.

Rengarajan, S. R., "Rectangular Patch Elements for Dual Polarized Dual Beam Microstrip Reflectarrays," National Radio Science Meeting, Boulder, CO, Jan. 2011.

Rengarajan, S. R., "A Perturbation Technique for Improving the Design of a Planar Slot Array," URSI Electromagnetic Theory Symposium, Berlin, Germany, August 2010.

Rengarajan, S. R., "Scanning Properties of Microstrip Reflectarray Antennas," IEEE International Symposium on Antennas and Propagation, Toronto, Canada, July 2010.

Krishnasamy, S. T., and Rengarajan, S. R., "Teaching-in-Context of Maxwell's Displacement Current: What Do Professors and Students Perceive?" IEEE International Symposium on Antennas and Propagation, Toronto, Canada, July 2010.

Rengarajan, S. R., "Advances in Waveguide-Fed Slot Arrays," IEEE International Symposium on Antennas and Propagation, Toronto, Canada, July 2010.

Zawadzki, M. S., Rengarajan, S. R., Hodges, R., and Chen, J., "Low Sidelobe Arrays for the Juno Microwave Radiometer," IEEE International Symposium on Antennas and Propagation, Toronto, Canada, July 2010.

Rengarajan, S. R., "Application of the Reciprocity Principle in the Design and Analysis of Microstrip Reflectarray Antennas," National Radio Science Meeting, Boulder, CO, Jan. 2010.

Rengarajan, S. R., "A Tutorial on the Design and Analysis of Waveguide-Fed Slot Arrays," IEEE Antennas and Electromagnetics Conference, Kolkata, India 2009 (Invited paper).

Rengarajan, S. R., "Design and Analysis of Microstrip Reflectarrays: A Tutorial," IEEE Antennas and Electromagnetics Conference, Kolkata, India 2009.

Rengarajan, S. R., "Parallel Plate Waveguide Excited by Square Waveguides for Dual-Polarized Line Source Application," IEEE International Symposium on Antennas and Propagation and URSI National Radio Science Meeting, Charleston, SC, July 2009.

Rengarajan, S. R., "Genetic Algorithm Applications in the Juno Radiometer Antenna Arrays," IEEE International Symposium on Antennas and Propagation, Charleston, SC, July 2009.

Rengarajan, S. R., Zawadzki, M., and Hodges, R., "Development of a Large Ka Band Waveguide Array for Digital Beamforming Application," IEEE International Symposium on Antennas and Propagation, Charleston, SC, July 2009.

Rengarajan, S. R., and Hodges, R. "Single Reflector Antenna for One Dimensional Beam Scanning," National Radio Science Meeting, Boulder, CO, Jan. 2009.

D. Moller, B. Heavey, R. Hodges, S. Rengarajan, E. Rignot, G. Sadowy, M. Simard and M. Zawadzki, "The application of Digital beamforming techniques to enable swath mapping of land Ice and Glacial topography", IGARSS 2008, Boston, MA.

Rengarajan, S. R., and Chatterjee, S., "Bandwidth Characteristics of Waveguide Planar Slot Arrays," XXIX triennial International Union of Radio Science (URSI) General Assembly, Chicago, IL, Aug. 2008.

Rengarajan, S. R., Zawadzki, M., and Hodges, R., "Slot array antennas for the Juno Radiometer Application," IEEE

International Symposium on Antennas and Propagation, San Diego, CA, July 2008.

Rengarajan, S. R., "Analysis of Iris-Excited Centered Slot in the Broad Wall of a Rectangular Waveguide," National Radio Science Meeting, Boulder, CO, Jan. 2008.

D. Moller, B. Heavey, S. Hensley, R. Hodges, S. Rengarajan, E. Rignot, G. Sadowy, M. Simard and M. Zawadzki, "The Glacier and Ice Sheet Topography Interferometer: An Update on a Unique Sensor for High Accuracy Swath Mapping of Land Ice", Fall AGU Meeting, 2007.

Rengarajan, S. R., "Optimization Techniques in the Design of Slot Arrays," North American Radio Science Meeting, Ottawa, Canada, July 2007.

D. Moller, B. Heavey, R. Hodges, S. Rengarajan, E. Rignot, F. Rogez, G. Sadowy, M. Simard, M. Zawadzki, "Technology Development of a Novel Ka-band Digitally-Beamformed Interferometric Radar With Application to Ice Topography Mapping", NSTC '07 conference, 2007.

Rengarajan, S. R., "Coupling Between Slot Arrays," URSI Electromagnetic Theory Symposium, Ottawa, Canada, July 2007.

Rengarajan, S. R., Zawadzki, M., and Hodges, R., "Bandwidth enhancements of large planar slot arrays," IEEE International Symposium on Antennas and Propagation, Honolulu, HI, July 2007.

Rengarajan, S. R., "Scattering and Receiving Characteristics of Waveguide-Fed Planar Slot Arrays," IEEE Radar Conference, Boston, MA, April 2007.

G. Sadowy, D. Moller, B. Heavey, R. Hodges, S. Rengarajan, E. Rignot, F. Rogez, M. Simard and M. Zawadzki, "Technology Demonstration of Ka-band Digitally-Beamformed Radar for Ice Topography Mapping," IEEE Symposium on Aerospace and Electronic Systems, Big Sky, MO, March 2007.

D. Moller, K. Aaron, Y. Gim, B. Heavey, R. Hodges, A. Nicolson, S. Rengarajan, E. Rignot, F. Rogez, G. Sadowy, M. Simard, M. Zawadzki, "An Interferometric Ka-band Synthetic Aperture Radar: A New Technique for Glacier and Ice-sheet Topography Mapping", Fall AGU Meeting, 2006.

D. Moller, B. Heavey, R. Hodges, S. Rengarajan, E. Rignot, F. Rogez, G. Sadowy, M. Simard and M. Zawadzki, "The Glacier and Land Ice Surface Topography Interferometer (GLISTIN): A Novel Ka-band Digitally Beamformed Interferometer", ESTC '06 Conference, College Park, MD, July 2006.

Rengarajan, S. R., and R. Hodges "A Study of Infinite Planar Arrays of Waveguide-Fed Slots," IEEE International Symposium on Antennas and Propagation and National Radio Science Meeting, Albuquerque, NM, June 2006.

Rengarajan, S. R., "Analysis of parallel plate waveguide T and step junctions," National Radio Science Meeting, Boulder, CO, Jan. 2006.

Huang, J., Hodges, R., Zawadzki, M., Rengarajan, S. R., Han, C., and Chang, K., "Recent Developments in Printed Reflectarrays at JPL," XXVIII triennial International Union of Radio Science (URSI) General Assembly in New Delhi, India in Oct. 2005.

Rengarajan, S. R., Kelley, D., Furse, C., and Shafai, L., "Electromagnetics Education in North America," XXVIII triennial International Union of Radio Science (URSI) General Assembly in New Delhi, India in Oct. 2005.

Rengarajan, S. R., "Radar Cross Section of Waveguide-Fed Planar Slot Arrays," XXVIII triennial International Union of Radio Science (URSI) General Assembly in New Delhi, India in Oct. 2005.

Rengarajan, S. R., "Scattering from Waveguide-Fed Planar Slot Arrays," Progress in Electromagnetics Research Symposium, Hangzhou, China, Aug. 2005.

Zawadzki, M., Rengarajan, S. R., and R. Hodges "The Design of H- and V-pol Slot Array Feeds for a Scanned, Offset Dual-Polarized Reflectarray," IEEE International Symposium on Antennas and Propagation and National Radio Science Meeting, Washington, DC, June 2005.

Rengarajan, S. R., "Analysis of a Traveling Wave Array of Compound Resonant Slots in Rectangular Waveguide," IEEE International Symposium on Antennas and Propagation and National Radio Science Meeting, Washington, DC, June 2005.

Rengarajan, S. R., "Higher Order Mode Coupling Between Coupling Slots in a Planar Slot Array," National Radio Science Meeting, Boulder, CO, Jan. 2005.

Rengarajan, S. R., "Microstrip Reflectarrays Consisting of Multilayer Stacked Patches," IEEE International Symposium on Antennas and Propagation and National Radio Science Meeting, Monterey, CA, June 2004.

Rengarajan, S. R., "Analysis of a Dual Frequency Microstrip Reflectarray," URSI Electromagnetic Theory Symposium, Pisa, Italy, May 2004.

Rengarajan, S. R., "Microstrip Reflectarrays with Multi-Layer Substrates and Superstrates," National Radio Science Meeting, Boulder, CO, Jan. 2004.

Rengarajan, S. R., "Reflectarray Characteristics and Basis Functions," IEEE International Symposium on Antennas and Propagation, Columbus, OH, June 2003.

Williamson, W. O., and Rengarajan, S. R., "Surface-Constrained Wire Antennas Designed by Genetic Algorithms," IEEE International Symposium on Antennas and Propagation, San Antonio, TX, June 2002.

Rengarajan, S. R., and Rahmat-Samii, Y., "On the Cross-Polarization Characteristics of Crooked Wire Antennas Designed by Genetic Algorithms," IEEE International Symposium on Antennas and Propagation, San Antonio, TX, June 2002.

Rengarajan, S. R., "Parallel Plate Waveguide Excited by a Linear Array of Square Waveguides," IEEE International Symposium on Antennas and Propagation, Boston, MA, July 2001.

Jensen, A. and Rengarajan, S. R., "Investigation on Broadwall Slots in Rectangular Waveguide for Longitudinal Polarization," IEEE International Symposium on Antennas and Propagation, Fukuoka, Japan, Aug. 2000.

Rengarajan, S. R. and Appel-Hansen, J., "On Matching of Equivalent Field regions: the Aperture Problem Revisited," IEEE International Antennas and Propagation Symposium/URSI Radio Science Meeting, Salt Lake City, UT, July 2000.

Jensen, A. and Rengarajan, S. R., "Analysis of a T-slot in a Rectangular Waveguide," IEEE International Antennas and Propagation Symposium/URSI Radio Science Meeting, Salt Lake City, UT, July 2000.

Rengarajan, S. R. and Rao, J.B.L., and "Arrays of Overlapping Sub-Arrays for Improved Sidelobe Level Performance," IEEE International Conference on Phased Array Systems and Technology, Dana Point, CA, May 2000.

Im, E., Durden, S. L., Sadowy, G., Berkun, A., Huang, J., Lou, M., Lopez, B. C., Rahmat-Samii, Y. and Rengarajan, S.R., "System Concept for the Next-Generation Spaceborne Precipitation Radars," IEEE Symposium on Aerospace and Electronic Systems, Big Sky, MO, March 2000.

Jensen, A. and Rengarajan, S. R., "Genetic Algorithm Optimization of a Traveling Wave Array of Longitudinal Slots in a Rectangular Waveguide," National Radio Science Meeting, Boulder, CO, Jan. 2000.

Rengarajan, S. R. and Imbriale, W., "Study of Deformable Flat Plate for Compensating the Gain-Loss of Reflector Antennas," IEEE International Antennas and Propagation Symposium/URSI Radio Science Meeting, Orlando, FL, July 1999.

Rengarajan, S. R., "Genetic Algorithm Optimization of Slot Arrays," IEEE International Antennas and Propagation Symposium/URSI Radio Science Meeting, Atlanta, GA, July 1998.

Nima, F. and Rengarajan, S. R., "Mutual Admittance Between Dielectric-Covered Slots: Spectral Domain Approach," IEEE International Antennas and Propagation Symposium/URSI Radio Science Meeting, Atlanta, GA, July 1998.

Rengarajan, S. R., Imbriale, W. and Cramer, P., "Design of a Deformed Flat Plate for Compensating the Gain-Loss of a Gravity-Induced Surface Distortion of Large Reflector Antennas," URSI Electromagnetic Theory Symposium, Thessaloniki, Greece, May 1998.

Skochinski, E. and Rengarajan, S. R., "Parallelizing Computational Electromagnetics Code using the Parallel Virtual Machine: Examples," The Fourteenth Annual Review of Progress in Applied Computational Electromagnetics, 1998 ACES Symposium, Monterey, CA, Mar. 1998 .

Dich, M., and Rengarajan, S. R., "A Waveguide Transverse Broad Wall Slot Radiating Between Baffles," IEEE International Antennas and Propagation Symposium/URSI Radio Science Meeting, Montreal, Canada, July 1997.

Oliver, L., Gonzalez, D., and Rengarajan, S. R., "Design of a Feed-Reflector Configuration to Optimize Performance in the Presence of a Large Central Blockage," IEEE International Antennas and Propagation Symposium/URSI Radio Science Meeting, Montreal, Canada, July 1997.

Peterson-Espino, C., Mahon, J., and Rengarajan, S. R., "A Rigorous Analysis of Wide Slots," IEEE International Antennas and Propagation Symposium/URSI Radio Science Meeting, Montreal, Canada, July 1997.

Ares, F., Villanueva, E., Rodriguez, J. A., Rengarajan, S. R., "Application of Genetic Algorithms in the Design and Optimization of Array Patterns," IEEE International Antennas and Propagation Symposium/URSI Radio Science Meeting, Montreal, Canada, July 1997.

Ares, F., Rengarajan, S. R., Ferreira, J. A., and Trastoy, A., "Synthesis of Antenna Patterns of Circular Arc Arrays," IEEE International Antennas and Propagation Symposium/URSI Radio Science Meeting, Montreal, Canada, July 1997.

Cramer, P., Imbriale, W. and Rengarajan, S. R., "A Method Using Focal Plane Analysis to determine the performance of reflector Antennas," International Conference on Antennas and Propagation (ICAP '96), Edinburgh, U.K., April 1997.

Ares, F., Rengarajan, S. R., Rodriguez, J. A., and Moreno, E., "Optimization of the Performance of Planar Arrays with Failed Elements Using the Simulated Annealing Technique," Journees Internationales de Nice sur les Antennes, JINA '96, Nice, France, Nov. 1996 .

Ares, F., Rengarajan, S. R., Rodriguez, J. A., Moreno, E., and Vieiro, A., "Optimization of Aperture Distributions in Planar Arrays Using Genetic Algorithms and the Simulated Annealing Technique," Spanish URSI Meeting, Madrid, Spain, Sep. 1996.

Ares, F., Rengarajan, S. R., Lance, J. A. F., Trastoy, A., and Moreno, E., "Synthesis of Conformal Array Antenna Patterns Using Circular Arcs," Spanish URSI Meeting, Madrid, Spain, Sep. 1996.

Ares, F., Villannueva, E., Rengarajan, S. R., and Moreno, E., "Search for Optimal Null-Filling Topography for Linear Antenna Arrays Using Genetic Algorithms and Simulated Annealing," Spanish URSI Meeting, Madrid, Spain, Sep. 1996.

- Joubert, J., and Rengarajan, S. R., "Design of Unequal H-plane Waveguide Power Dividers for Array Applications," IEEE International Antennas and Propagation Symposium/URSI Radio Science Meeting, Baltimore, MD, July 1996.
- Ares, F., Rengarajan, S. R., Rodriguez, J.A., and Moreno, E., "Optimal Compromise Among Sum and Difference Patterns Through Sub-Arraying," IEEE International Antennas and Propagation Symposium/URSI Radio Science Meeting, Baltimore, MD, July 1996.
- Ares, F., Rengarajan, S. R., Villannueva, E., Skochinski, E., and Moreno, E., "Application of Genetic Algorithms and Simulated Annealing Technique in Optimizing the Aperture Distributions of Antenna Arrays," IEEE International Antennas and Propagation Symposium/URSI Radio Science Meeting, Baltimore, MD, July 1996.
- Rengarajan, S. R., "Mutual Coupling Between Waveguide-Fed Slots Radiating Between Baffles Using a Spectrum of Two-Dimensional Solutions," Progress in Electromagnetics Research Symposium (PIERS-95), Seattle, Washington, July 1995 .
- Rengarajan, S. R., "Mutual Coupling Between Transverse Slots Radiating Between Baffles Using a Spectrum of Two-Dimensional Solutions," IEEE International Antennas and Propagation Symposium/URSI Radio Science Meeting, Newport Beach, CA, June 1995 .
- Ares, F., Rengarajan, S. R., Vieiro, A. and Moreno, E. "Orchard's Pattern Synthesis Technique for Overdetermined Systems: Case Studies," IEEE International Antennas and Propagation Symposium, Newport Beach, CA, June 1995.
- Ares, F., Rengarajan, S. R., Vieiro, A. and Moreno, E. "Optimisation of Aperture Distributions for Difference Patterns," IEEE International Antennas and Propagation Symposium, Newport Beach, CA, June 1995.
- Yaccarino, R., and Rengarajan, S. R., "A Comparison of Two Forms of Spherical Wave Expansions," IEEE International Antennas and Propagation Symposium, Newport Beach, CA, June 1995.
- Rengarajan, S.R., "Mutual Coupling Between Slots in Cylindrical structures: Spectral Domain Analysis," URSI Triennial Electromagnetic Theory Symposium, St. Petersburg, Russia, May 1995.
- Ares, F., Rengarajan, S.R., and Moreno, E. "An Improved Planar Array Pattern Synthesis for Space Communication Applications," 24th European Microwave Conference, Cannes, France, Sep. 1994.
- Cramer, P., Imbriale, W. and Rengarajan, S. R., "Improved Optimization Methods for Array Feed Calculations," Progress in Electromagnetics Research Symposium (PIERS-94), Noordwijk, the Netherlands, Jul. 1994.
- Peterson, C., and Rengarajan, S. R., "A Rigorous Analysis of Weakly Excited Broadwall Slots," IEEE International Antennas and Propagation Symposium, Seattle, WA, June 1994.
- Rengarajan, S. R., "Accurate Coupling Junction Models in the Design of Planar Slot Arrays," IEEE International Antennas and Propagation Symposium, Seattle, WA, June 1994.
- Rengarajan, S. R., and Kildal, P.-S. "Spectrum of Two-Dimensional Solutions in Antennas and Scattering," National Radio Science Conference, Boulder, CO., Jan. 1994.
- Taylor, R. M., Gillespie, E. S., and Rengarajan, S. R., "Simulation and Verification of an Anechoic Chamber," Antenna measurement Techniques Association Conference, Dallas, Tx, Oct. 1993 .
- Rengarajan, S. R., and Josefsson, L., "Recent Advances in Waveguide-Fed Planar Slot Arrays," Progress in Electromagnetics Research Symposium (PIERS 93), Pasadena, CA, July 1993 .
- Rengarajan, S. R., and Shaw, G. M., "The Coupling Junction Effects in Waveguide-Fed Planar Slot Arrays," Progress in Electromagnetics Research Symposium (PIERS 93), Pasadena, CA, July 1993.

Lyerly, A., Rengarajan, S. R., Villaseca, E., "Equivalent Edge Current Technique for Accurate Determination of Reflector Antenna Patterns," IEEE International Antennas and Propagation Symposium, Ann Arbor, MI, July 1993.

Galindo-Israel, V., Rengarajan, S. R., Veruttipong, T., and Imbriale, W. A., "Design of a Correcting Plate for Compensating the Main Reflector Distortions of a Dual Shaped System," IEEE International Antennas and Propagation Symposium, Ann Arbor, MI, July 1993.

Rengarajan, S. R., "Interpolation Methods in the Design and Analysis of Slot Arrays," IEEE International Antennas and Propagation Symposium, Ann Arbor, MI, July 1993.

Brattstrom, S-O, Derneryd, A., van't Klooster, K., and Rengarajan, S. R., " A New Design for Future Windscatterometer Array Antennas," Journees Internationales de Nice sur les Antennes, JINA '92, Nice, France, Nov. 1992.

Espino, C. P., and Rengarajan, S. R., "On the Longitudinal Component of the Aperture Electric Field in a Weakly Excited Broad Wall Slot," IEEE Fifth Biennial Conference on Electromagnetic Field Computation, Claremont, CA, Aug. 1992.

Rengarajan, S. R., and Derneryd, A., "Application of Resonant Compound Coupling Slots for Planar Slot Arrays with Shaped Patterns," URSI International Electromagnetic Theory Symposium, Sydney, Australia, Aug. 1992.

Rengarajan, S. R., "Scattering Properties of Broad Wall Slots in Rectangular Waveguides," IEEE International Antennas and Propagation Symposium, Chicago, IL, July 1992.

Rengarajan, S. R., and Derneryd, A., "Improved Scattering Model for Weakly Coupled Broad Wall Slots," IEEE International Antennas and Propagation Symposium, Chicago, IL, July 1992.

Derneryd, A., Rengarajan, S. R., and Brattstrom, S-O, "A Slotted Waveguide Antenna Employing Resonant Compound Coupling Slots for Beam Shaping," IEEE International Antennas and Propagation Symposium, Chicago, IL, July 1992.

Forooraghi, K., Kildal, P.-S., and Rengarajan, S. R., "Admittance of a Longitudinal Slot Radiating Between Baffles Using a Spectrum of Two-Dimensional Solutions," IEEE International Antennas and Propagation Symposium, Chicago, IL, July 1992.

Shaw, G.M., Rengarajan, S. R., and Elliott, R. S., "Analysis of Coupling Junctions in Planar Slot Array Antennas," IEEE International Antennas and Propagation Symposium, Chicago, IL, July 1992.

Kildal, P.-S., Forooraghi, K., Wettergren, J., and Rengarajan, S. R., "Analysis of Cylindrical Antennas Using a Spectrum of Two-Dimensional solutions: A New Analysis Technique and Its Applications to Arrays of Slots and Dipoles," COST Workshop on Phased Arrays, European Space Agency (ESTEC), Noordwijk, the Netherlands, June 1992.

Rengarajan, S. R., Galindo-Israel, V., Imbriale, W., and Mittra, R., "Spherical Wave Expansions and Dual-Shaped Reflector Applications in the Design of Compact Ranges," International Conference on Electromagnetics in Aerospace Applications, Torino, Italy, Sep. 1991.

Kildal, P.-S., Rengarajan, S. R., and Forooraghi, K., "Analysis of Waveguide Slot Antennas with Arbitrary Finite Outer Cross-Sections Using a Spectrum of Cylindrical Waves," IEEE International Antennas and Propagation Symposium, London, ON, Canada, June 1991.

Imbriale, W., Galindo-Israel, V., Rengarajan, S. R., and Mittra, R., "Application of Offset Dual-Shaped Reflectors for Compact Range," IEEE International Antennas and Propagation Symposium, London, ON, Canada, June 1991.

Rengarajan, S. R., and Steinbeck, M., "Longitudinal Slots in Dielectric - Filled Rectangular Waveguides," IEEE International Antennas and Propagation Symposium, London, ON, Canada, June 1991.

- Rengarajan, S. R., and Gabrelian, E., "External Mutual Coupling Computations in Slot Arrays," IEEE International Antennas and Propagation Symposium, London, ON, Canada, June 1991.
- Rengarajan, S. R., and Yaccarino, R., "Spherical Wave Expansions for Reflector Antennas with Truncated Field Data," IEEE International Antennas and Propagation Symposium, London, ON, Canada, June 1991.
- Hussein, Z., and Rengarajan, S. R., "Ground Plane Effects on Quadrifilar Helixes for GPS Applications," IEEE International Antennas and Propagation Symposium, London, ON, Canada, June 1991.
- Rengarajan, S. R., Josefsson, L. and Petersson, R., "Recent Developments in Broadwall Slots in Rectangular Waveguides for Array Applications," International Conference in Antennas and Propagation, York, U.K., April 1991.
- Rengarajan, S. R. and Lier E., "Propagation and Radiation Characteristics of Elliptical Dielectric Horns," IEEE International Antennas and Propagation Symposium, Dallas, TX, May 1990.
- Rengarajan, S. R., "Higher Order Mode Coupling Effects in Feeding Waveguide of a Planar Slot Array," IEEE International Antennas and Propagation Symposium, Dallas, TX, May 1990.
- Rengarajan, S. R., Galindo-Israel, V. and Imbriale, W. A., "A Study of Amplitude and Phase Shaping Effects in Beam Waveguides," IEEE International Antennas and Propagation Symposium, Dallas, TX, May 1990.
- Lier, E., Rahmat-Samii, Y. and Rengarajan, S. R., "Elliptical and Rectangular Dielectric Horns for Reflector Antenna Applications," IEEE International Antennas and Propagation Symposium, Dallas, TX, May 1990.
- Lier, E., Rengarajan, S. R. and Rahmat-Samii, Y., "Comparison Between Different Rectangular Horn Elements for Array Antenna Applications," IEEE International Antennas and Propagation Symposium, Dallas, TX, May 1990.
- Rengarajan, S. R., Potter, A. and Li, W., "Analysis of Waveguide-Fed Thick Walled Slot Radiator With Parasitic Wires," the 6th Annual Review of Progress in Applied Computational Electromagnetics, Monterey, CA, March 90.
- Lier E., and Rengarajan, S. R., "Accurate Analysis of Elliptical Hybrid-Mode Horn Antennas," National Radio Science Conference, Boulder, CO., Jan. 1990
- Rengarajan, S. R., "Resonant Coupling Slots for Complex Excitation of Planar Slot Arrays," URSI International Symposium on Electromagnetic Theory, Stockholm, Sweden, Aug. 1989.
- Rengarajan, S. R., "Radiating Slots Near Resonance in a Broad Wall of a Rectangular Waveguide," IEEE International Antennas and Propagation Symposium, San Jose, CA, June 1989.
- Rengarajan, S. R., "Slot Couplers for Feeding Branch Waveguides of a Planar Slot Array," IEEE International Antennas and Propagation Symposium, San Jose, CA, June 1989.
- Rengarajan, S. R., Galindo-Israel, V., Veruttipong, T., and Imbriale, W. A., "Asymptotic Evaluations of Near Field Physical Optics Integrals for Shaped Sub-Reflectors," IEEE International Symposium on Antennas and Propagation, San Jose, CA, June 1989.
- Rengarajan, S. R., "Analysis of Longitudinal/Transverse Coupling Slots," National Radio Science Meeting, Boulder, CO., Jan. 1989.
- Galindo-Israel, V., Veruttipong, T., Rengarajan, S. R., and Imbriale, W. A., "Transition Region Caustic Problems and Solutions for Dual-Shaped Reflector Antennas," National Radio Science Meeting, Boulder, Co., Jan. 1989.

_____, "Inflection Point Caustic Problems and Solutions for High-Gain Dual-Shaped Reflectors," International Symposium on Antenna Technology and Applied Electromagnetics, Winnipeg, Manitoba, Canada, Aug. 1988.

Rengarajan, S. R., "Characteristics of a Centered-Inclined Slot Coupler for Waveguide-Fed Slot Arrays," International Symposium on Antenna Technology and Applied Electromagnetics, Winnipeg, Manitoba, Canada, Aug. 1988.

Rengarajan, S. R., "Broad Wall Tilted Slots on Rectangular Waveguides," IEEE International AP-S/URSI Symposium, Syracuse, NY, June 1988.

Rengarajan, S. R. and Yaccarino, R. G., "Truncated Spherical Probing," IEEE International AP-S/URSI Symposium, Syracuse, NY, June 1988.

Rengarajan, S. R., "Analysis of Compound Slots," National Radio Science Meeting, Boulder, CO, Jan. 1988.

Rengarajan, S. R. and Li, W., "Moment Method Analysis of a Clavin Element," IEEE International AP-S/URSI Symposium, Blacksburg, VA June 1987.

Rengarajan, S. R. and Gillespie, E. S., and Galindo-Israel, V., "Spherical Wave Expansion of Circular Apertures and Horns," IEEE International AP-S/URSI Symposium, Blacksburg, VA, June 1987.

Rengarajan, S. R. and Gillespie, S. Jr., "Dielectric Scattering in Radomes," IEEE International Antennas and Propagation Symposium, Philadelphia, PA, June 1986.

Rengarajan, S. R., "Critical Gimbal Angles of Ogival Radomes," IEEE International Antennas and Propagation Symposium, Philadelphia, PA, June 1986.

Rengarajan, S. R., "Cutoff Characteristics of the First Higher-Order Mode of Elliptical Fibers," IEEE AP-S/URSI Symposium, Philadelphia, PA, June 1986.

Rengarajan, S. R., "Finite Ground Plane Effects on Planar Arrays of Microstrip Patch Elements," IEEE International Antennas and Propagation Symposium, Boston, MA, June 1984.

Cheng, J.K., Mishra, N. K. and Rengarajan, S. R., "Simulation of Respiratory Electromyogram," Conference on Mathematical Modeling and Simulation, Pittsburgh, PA, 1983.

Mishra, N. K. and Rengarajan, S. R., "Time-Domain Analysis of Respiratory Electromyogram," First Southern Biomedical Conference, Shreveport, Louisiana, June 1982.

Rengarajan, S. R., "Elliptical Microstrip Patch Antennas," IEEE International AP-S/URSI Symposium, Albuquerque, New Mexico, May 1982.

Wong, R. Y. and Rengarajan, S. R., "Simultaneous Video Signal Transmission with Multi-Layer Optical Fiber," SPIE Los Angeles Technical Symposium, Jan. 1982.

Wong, R. Y. and Rengarajan, S. R., "Optical Communications with Elliptical Fibers," IEEE International AP-S/URSI Symposium, Los Angeles, CA, June 1981.

Rengarajan, S. R. and Lewis J. E., "Elliptical Optical Fibers," North American Radio Science Meeting and IEEE/AP-S Int'l Symposium, combined session, B.7/AP-S, Laval University, Quebec, Canada, June 1980.