



At each AMEREM/EUROEM Conference, Best Paper Awards are given for papers in the Notes for the previous two years. SUMMA officers/directors are ineligible for monetary awards; paper where they are the only authors are ineligible.

1973-1974, given 7 June 1978

Best Basic EMP Source Region Paper

Dave E. Merewether and William A. Radasky, "Nonlinear Electromagnetic Fields within a Cylindrical Cavity Excited by Ionizing Radiation," Theoretical Note 228, February 1973.

Best Basic EMP Non-Source Region Paper

Donald R. Wilton and O. Chester Dunaway, "Electromagnetic Penetration Through Apertures of Arbitrary Shape: Formulation and Numerical Solution Procedure," Interaction Note 214, July 1974

Best Applied EMP Non-Source Region Paper

Jeremy A. Landt, "Peak Current Estimates: Cylinders in Free Space with Extensions to Other Structures," Interaction Note 209, April 1974

1974-1978, given 6 August 1980

Best Basic EMP Source Region Paper

D.F. Higgins, "Analytic Calculations of the Electromagnetic Fields from a Highly Space-Charge-Limited SGEMP Boundary Layer," Theoretical Note 286, August 1976

Best Applied EMP Source Region Paper

L. Marin, K.S.H. Lee, and T.K. Liu, "Analytical Calculations on Photoelectron-Induced Currents on a Model of the FLTSATCOM Satellite," Theoretical Note 206, February 1975

Best Basic EMP Non-Source Region Paper

D.B. Seidel, D.G. Dudley, and C.M. Butler, "Aperture Excitation of a Wire in a Rectangular Cavity," Interaction Note 345, June 1977

Best Applied EMP Non-Source Region Paper

M.I. Sancer, "Fundamental Errors Associated with the Gross Modelling of the Physical Features of Metallic Enclosures," Interaction Note 298, December 1978

1979-1981, given 26 May 1982

Best Basic EMP Source Region Paper

K.S.H. Lee, "A Note on EMP Propagation Over Imperfectly Conducting Ground," Theoretical Note 311, June 1980

Best Applied EMP Source Region Paper

F.C. Yang, "A Distributed Source-Region EMP Simulator," Sensor and Simulation Note 266, July 1980

Best Basic EMP Non-Source Region Paper

D.R. Wilton, S.M. Rao and A.W. Glisson, "Electromagnetic Scattering by Surfaces of Arbitrary Shape," Interaction Note 388, September 1979

Best Applied EMP Non-Source Region Paper

E.F. Vance, "On Electromagnetic Interference Control," Interaction Note 380, October 1979



1981-1983, given 3 July 1984

- Best Basic EMP Source Region Paper  
C.L. Longmire, R.L. Gardner, L.L. Gilbert, and M.H. Frese, "A Physical Model of Nuclear Lightning," Lightning Phenomenology Note 4, March 1982
- Best Applied EMP Source Region Paper  
C.E. Baum, E.L. Breen, J.P. O'Neill, C.B. Moore, and D.L. Hall, "Measurements of Electromagnetic Properties of Lightning with 10 Nonosecond Resolution," Lightning Phenomenology Note 3, February 1982
- Best Basic EMP Non-Source Region Paper  
K.A. Michalski and L.W. Pearson, "Synthesis of SEM-Derived Equivalent Circuits of Electromagnetic Energy Collecting Structures," Interaction Note 423, October 1981
- Best Applied EMP Non-Source Region Paper  
J.A. Auton and M.L. Van Blaricum, "Investigation of Procedures for Automatic Resonance Extraction from Noisy Transient Electromagnetics Data, Vols. I, II, and III, Mathematics Note 79, August 1981

1984-1985, given 19-23 May 1986

- Best Applied EMP Non-Source Region Paper  
W. Graf, J.M. Hamm, and E.F. Vance, "Unification of Electromagnetic Specifications and Standards Part II: Recommendations for Revisions of Existing Practices," Interaction Note 439, February 28, 1983.
- Best Basic EMP Source Region Paper  
R.E. Leadon, T.M. Flanagan, C.E. Mallon and R. Denson, "Non linear Electrical Studies on Buried Conductors," Theoretical Note 348, November 1, 1983.
- Best Applied EMP Source Region Paper  
R.L. Gardner, L. Baker, J.L. Gilbert, C.E. Baum, and D.J. Andersh, "Comparison of Published HEMP and Natural Lightning on the Surface of an Aircraft," Lightning Phenomenology Note 12, August 17, 1984
- Best Basic EMP Non-Source Region Paper  
None given this period.

1986-1987, given 18 May 1988

- Best Basic EMP Source Region Paper  
Conrad Longmire, Robert Hamilton, and Jane Hahn, "A Nominal Set of High Altitude EMP Environments," Theoretical Note 354, January, 1987
- Best Applied EMP Source Region Paper  
No selection was made because of the paucity of papers in the category.
- Best Basic EMP Non-Source Region Paper  
Kenneth Chen, "Transient Response of an Infinite Cylindrical Antenna in a Dissipative Medium," and "Transient Response of an Infinite Wire in a Dissipative Medium, Interaction Note 452 and Interaction Note 453, October 1985
- Best Applied EMP Non-Source Region Paper  
Fredrick Tesche, "A Study of Overhead Line Responses to High Altitude Electromagnetic Pulse Environments" Interaction Note 458, December, 1986



1988-1990, given 30 May 1990

Best Basic Paper in High Power Electromagnetics

Jürgen Nitsch, Carl Baum and Richard Sturm, "Splitting of Degenerate Natural Frequencies in Coupled Two Conductor Lines by Distance Variation," Interaction Note 477, July 1989

Best Applied Paper in High Power Electromagnetics

Everett Farr and Joseph Hofstra, "An Incident Field Sensor for EMP Measurements," Sensor and Simulation Note 319, November 1989

1990-1991, given 7 July 1992

Best Basic Paper in High Power Electromagnetics

Carl E. Baum and Haralambos N. Kritikos, "Symmetry in Electromagnetics, Physics Note 2," December 1990

Best Applied Paper in High Power Electromagnetics

D.V. Giri, "Preliminary Considerations for High-Power Microwave (HPM) Radiating Systems, Circuitry and Electromagnetic Systems Design Note 40, December 1990.

1992-1993, given 11 April 1994

Best Basic Paper in High Power Electromagnetics

K.S.H. Lee and F.C. Yang, "On the Bounds of RF Coupling by Impulse and Step-Function Waveforms," Interaction Note 491, September 1992

Best Applied Paper in High Power Electromagnetics

J.J.A. Klaasen, "An Efficient Method for the Performance Analysis of Bounded-Wave Nuclear EMP Simulators," Sensor and Simulation Note 345, August 1992

1994-1995, given 10 June 1996

Best Basic Paper in High Power Electromagnetics

William J. Karzas, "Back Door Coupling of RF (Microwave) Energy to Spacecraft Interior Cabling," Interaction Note 513, February 1994

Best Applied Paper in High Power Electromagnetics

J.P. Parmantier, V. Gobin, F. Issac, I. Junqua, Y. Daudy, J.M. Lagarde, "An Application of the Electromagnetic Topology Theory on the Test-Bed Aircraft, EMPTAC," Interaction Note 506, November 1993



1996-1997, given 14-19 June 1998

Best Basic Paper in High Power Electromagnetics

Federick M. Tesche, "The PxM Antenna and Applications to Radiated Field Testing of Electrical Systems: Part 1 – Theory and Numerical Simulations," *Sensor and Simulation Note* 407, July 1997

Best Applied Paper in High Power Electromagnetics

Clifton C. Courtney, David A. Slemp, Darren R. Baum, Carl E. Baum, Robert J. Torres, and William D. Prather, "Coaxial Beam-Rotating Antenna (COBRA) Prototype Measurements," *Sensor and Simulation Note* 408, July 1997

1998-1999, given 30 May-2 June 2000

Best Basic Paper in High Power Electromagnetics

Frank Grunwald and Jürgen Nitsch, "The physical origin of gauge invariance in electrodynamics and some of its consequences," *Physics Note* 10, September 1998

Best Applied Paper in High Power Electromagnetics

Lawrence Carin, I.J. Won, Dean Keiswetter and C.E. Baum, "Wideband Time- and Frequency-Domain EMI: Phenomenology and Signal Processing," *Interaction Note* 548, December 1998

2000-2001, given 2-7 June 2002

Best Basic Paper in High Power Electromagnetics

Heiko Haase and Jürgen Nitsch, "Full-wave transmission-line theory (FWTLT) for the analysis of three-dimensional wire like structures," *Interaction Note* 561, July 2000

Best Applied Paper in High Power Electromagnetics

Everett G. Farr, L.H. Bowen, Glen R. Salo, John S. Gwynne, Carl E. Baum, William D. Prather and Tyrone Tran, "Studies of an Impulse Radiating Antenna and a Pulse Radiating Antenna Element for SAR and Target Identification Application," *Sensor and Simulation Note* 442, March 2000

2002-2003, given 12-16 July 2004

Best Basic Paper in High Power Electromagnetics

Jürgen Nitsch and Sergey Tkachenko, "Complex-Valued Transmission-Line Parameters and Their Relation to the Radiation Resistance," *Interaction Note* 573, September 2002

Best Applied Paper in High Power Electromagnetics

C.E. Baum, W. L. Baker, W.D. Prather, W.A. Walton III, R. Hackett, J.M. Lehr, J.W. Burger, R.J. Torres, J. O'Loughlin, H.A. Dogliani, J.S. Tyo, J.S.H. Schoenberg, G.J. Rohwein, D.V. Giri, I.D. Smith, R. Altes, G. Harris, J. Fockler, D.F. Morton, D. Mclemore, K.S.H. Lee, T. Smith, H. LaValley, M.D. Abdalla, M.C. Skipper, F. Gruner, B. Cockreham, and E.G. Farr, "JOLT: A Highly Directive, Very Intensive, Impulse-Like Radiator," *Sensor and Simulation Note* 480, November 2003



2004-2005, given 10-14 July 2006

Best Basic Paper in High Power Electromagnetics

Frank Gronwald, Friedrich W. Hehl, "Axiomatics of classical electrodynamics and its relation to gauge field theory," Physics Note 14, June 2005

Best Applied Paper in High Power Electromagnetics

Michael Camp, Daniel Nitsch, Frank Sabath, Jan-Luiken ter Haseborg, and Heyno Garbe, "Susceptibility of Some Electronic Equipment to HPEM Threat," System Design and Assessment Note, February 2004