SESSION 12: FINITE DIFFERENCE TIME DOMAIN II
Chair: Raymond Luebbers  Co-Chair: John Beggs

"FD-TD Algorithm for the Nonlinear Maxwell's Equations with Applications to Femtosecond Soliton Propagation" by P.M. Goorjian, R.M. Joseph and A. Taflove 2

"Finite Difference - Time Domain Tests of Random Media Propagation Theory" by L.J. Nickisch and P.M. Franke 4

"3D Analysis of Nonlinear Magnetic Diffusion by FDTD Techniques" by R. Holland 20

"Performance Prediction for Three-Dimensional Anechoic Chambers using FDTD" by V. Cable, R. Luebbers, C. Penney, S. Langdon and J. Schuster 28

"Application of the Finite-Difference Time-Domain Method in the Simulation of Delta-I Noise in Electronic Packaging" by J. Fang, Z. Wu, Y. Chen and Y. Liu 30

"A Closed Form Solution of the Input Impedance of Two-Dimensional FDTD Grids" by Z. Wu, J. Fang and Y. Liu 38

"Deriving a Synthetic Conductivity To Enable Accurate Prediction of Losses In Good Conductors Using FDTD" by K. Chamberlin and L. Gordon 46

"Creating FDTD Models of Aircraft with GWTO-FDTD" by C.W. Trueman, S.J. Kubina and B. Messier 53

"High Order FDTD Algorithm to Reduce Numerical Dispersion and Staircasing" by T. Deveze 61

SESSION 13: GEMACS
Chair: Ken Siarkiewicz  Co-Chair: Buddy Coffey

"Recent Enhancements to GEMACS 5.3" by E.L. Coffey 70

"Estimation of GEMACS Computer Resource Requirements" by R. Fisher, E.L. Coffey and J.D. Letterio 72

"Modeling Cavity Problems with GEMACS 5.3" by E.L. Coffey 80

"F-16 Structure Modeling Using GEMACS 5.3" by B. Fisher, E.L. Coffey and T.J. Timmerman 81

"The Microwave and Millimeter-Wave Advanced Computational Environment Program -A Computer Based Design Environment for High Frequency Electronics" by R.H. Jackson 85

"Further Considerations Regarding the Electromagnetic Modeling and Simulation Environment for Systems (EMSES)" by K.R. Siarkiewicz 86
SESSION 14: MOMENT METHODS

Chair: Paul Goggins

"Results Using IML with a New CFIE" by F.X. Canning

"A New Method for Evaluating the Generalized Exponential Integrals Associated with Thin Straight-Wire Antennas" by P.L. Werner and D.H. Werner

"Techniques for Evaluating the Uniform Current Vector Potential at the Isolated Singularity of the Cylindrical Wire Kernel" by D.H. Werner, J.A. Huffman, and P.L. Werner

"A Parallel Implementation of a Thin Wire EFIE Code" by A. Tinniswood, A.M. Tyrrell, and S.R. Cloude

"More Improvements in the Method of Moments Solution of Antennas and Arrays using Pocklington’s and Hallen’s Integral Equations" by F.M. El-Hefnawi

"Upgrading Common Wire-Grid MoM Programs" by A. Blank and S. Averbuch

"Utilizing Structure Symmetry in Reducing the CPU Time for Computing the Moment Method [Z] Matrix Elements" by Z.O. Al-Hekail

"Numerical-Analytical Algorithms Based on Dual Series Equations Technique" by Y. Tuchkin, V. Veremey, Y. Svischov and V. Dudka

"Moment Method Analysis of Non-Orthogonal Waveguide to Waveguide Coupling Through Slot" by S. Christopher, A.K. Singh and K.U. Limaye


"Developing Optimal and Automatic Frequency Sampling in Moment-Method Solutions" by G.J. Burke and E.K. Miller

"Reflections on Some of the Folklore of the Moment Method" by R.C. Bcoton

SESSION 15: EMI/EMP/EMC

Chair: Frank Walker Co-Chair: Reinaldo Perez

"Validation of a Numerical Finite Integration Code to Solve Transient Electromagnetic, Acoustic and Elastic Wave Scattering in 2D" by K.J. Langenberg and R. Marklein

"Comparison Between LEMP & NEMP Induced Overvoltages in 33 kV Overhead Distribution Lines" by R. Moini, B. Kordi, B. Vahidi and M. Abedi

"Monopole Near-Field Coupling Analysis -- Comparison of Experimental and NEC Results" by M.L. Wheeler and R.J. Levin

"Development of a High Power Microwave Susceptibility Simulation Capability at Phillips Laboratory’s Satellite Assessment Center" by M.L. Zywien

"Test Fidelity in Anechoic Chambers" by C. Courtney and D. Voss

"An Investigation Into Alternative Construction Techniques to Reduce Shielded Room Resonance Effects" by B. Archambeault and K. Chamberlin

"Electromagnetic Interference (EMI) Susceptibility Analysis of an Airborne Phased Array Antenna System" by F.E. Walker and S.L. Badger

vii
SESSION 16: HYBRID

Chair: Bob Burkholder

"A Hybrid Approach for Computing the EM Scattering From Complex Terminations Inside Large Open Cavities" by R.J. Burkholder, P.R. Rousseau and P.H. Pathak

"Electromagnetic Modeling of Jet Engine Cavities with the CAVERN Code" by J.L. Karty and S.D. Alspach

"An Iterative Method for Computing the Scattered Electric Fields at the Apertures of Large Perfectly Conducting Cavities" by D.D. Reuster and G.A. Thiele

"Hybrid Formulation for Arbitrary 3-D Bodies" by L.N. Medgyesi-Mitschang and J.M. Putnam

"Hybrid (MM-UTD) Analysis of EM Scattering by Large Convex Objects with Appendages" by M. Hsu, P.H. and H. Tseng

"Reducing the Operation Count in Computational Electromagnetics Using Hybrid Models" by E.K. Miller

"A Hybrid Technique for NEC (Numerical Electromagnetics Code)" by S.R. Rousseau and W.F. Perger

"An Approach for Solving System-Level Electromagnetic Coupling Problems" by E.G. Farr and R.J. Antinone

"Efficient MMP Computation of Periodic Structures" by C. Hafner and L.H. Bomholt

SESSION 17: PROPAGATION AND IMAGING

Chair: Dennis Andersh

"A Physical Optics Model for Scattering of HF Radiation by Irregular Terrain" by G.J. Burke


"On the Use of Ray Tracing for Complex Targets" by T.G. Moore, E.C. Burt and F.P. Hunsberger

"Technique to Calculate the Cross-Section of the Optoelectronic Radar with Impulse Source of Electromagnetic Radiation" by V. Ovod, K. Bauckhage, S.T. Koval, A.V. Perekrest and A.E. Ivanisov

"Technique to Increase the Computation Accuracy of the Scattered Electromagnetic Field in the Simulation of the Phase-Doppler Size Analyzer" by V. Ovod, T. Wriedt, K. Bauckhage and V.M. Zemljansky

"Time-Domain Electromagnetic Responses and Model Uncertainties" by R. Inguva, C.R. Smith, P.M. Goggons and D.J. Andersh

"EAM:BSC An Electromagnetic Scattering Analysis Tool for Windows" by A.P. Tsitsopoulos and M.J. Packer
SESSION 18: PRE AND POST PROCESSING

Chair: Todd Hubing
Co-Chair: Linda Russell

"NEC - MoM Workstation: NEEDS 3.0" by L. Russell, D. Tam, J. Rockway, D. Wentworth and J. Eadie

"AutoNEC... A Marriage of Convenience" by A. Nott

"A Ray Tracer for the NEC Basic Scattering Code" by D.P. Davis, R. Paknys and S.J. Kubina

"SOURCE to FIELD, What Happens in Between? A New Method for Graphical Display of GTD Scattering" by J.A. Evans and E.L. Coffey


"A Proposed EM Code Interface Standard" by E.L. Coffey

"A Geometry Description Language for 3D Electromagnetic Analysis Codes" by T. Hubing, C. Hong-Him Lim and J. Drewniak

SESSION 19: HIGH FREQUENCY

Chair: Janice Karty


"A Simple Physical Optics Algorithm Perfect For Parallel Computing Architecture" by W.A. Imbriale and T. Cwik

"A UGO/EUTD with Application to Fourth Order Polynomial Strips" by R.J. Marhefka and E.D. Constantinides

"Radiation Due to a Convex Curvature Discontinuity of a Dielectric Coated Perfect Conductor" by D.H. Monteith and R.G. Olsen

"High Frequency Scattering by a Conducting Circular Cylinder Coated with a Lossy Dielectric of Non Uniform Thickness-TE Case" by S.G. Tanyer and R.G. Olsen

"Efficient Computational Technique for Backscattering from a Discontinuity Along a Piecewise Continuous Curve on a Planar Surface" by J. Kim and O.B. Kester

"Computer Simulation of Diffraction and Focusing Processing in Quasioptics" by A.V. Popov, Yu V. Kopylov, and A.V. Vinogradov

"Symbolic Programming With Series Expansions: Applications to Optical Waveguides" by R.L. Gallawa, A. Kumar and A. Weisshaar
SESSION 20: LOW FREQUENCY
Chair: John Brauer Co-Chair: Abd Arkadan

"A Comparison of Two Low-Frequency Formulations for the Electric Field Integral Equation"
by W. Wu, A.W. Glisson and D. Kajfez

"Computations of Induced Electric Fields in Biological Cells Exposed to Magnetic Fields"
by M.A. Stuchly and W. Xi

"Induced Currents in Biological Bodies in Low Frequency Magnetic Fields: Impedance Method
with Improved Spatial Resolution" by W. Xi and M.A. Stuchly

"The Two-Dimensional Finite Integral Technique Combined with the Measured Equation of
Invariance Applied to Open Region Scattering Problems" by G.K. Gothard and S.M. Rao

"A T-Matrix Solution for the Scattering from Dielectric Cylinders" by J.P. Skinner

SESSION 21: EDUCATION
Chair: Magdy Iskander

"EMAG 2.0 - Enhanced 2D Electrostatic and Magnetostatic Solver in MATLAB"
by D.P. Wells and J. Lebaric

"Using Numerical Electromagnetic Code (NEC) to Improve Student Understanding of Monopole
Antennas and to Design a Two Element Monople Array" by M. McKaughan and W.M. Randall

"Finite Difference Analysis with MATLAB and VMAP in Undergraduate Instruction"
by W.P. Wheless and C.S. Wheless

SESSION 22: MICROWAVE
Chair: Richard Booton

"Optimization of Microwave Structures Using a Parallel TLM Module"
by P.M.S. Poman and W.J.R. Hoefer

"Statistical Response of Enclosed Systems to HPM Environments"
by R. Holland and R. St. John

"A Time-Domain Technique for the Analysis of Nonlinear Devices and Circuits"
by N. Marin, K. Fobelets, J. Genoe and G. Borghs

"Full-Wave Analysis of Coplanar Waveguide Discontinuities by a Partial Wave Synthesis"
by R. Schmidt and P. Russer

SESSION 23: MATERIALS AND SIMULATION METHODS
Chair: Fabio Cavallini

"Modeling Transverse Electromagnetic Waves in Conducting Anisotropic Media by a Spectral
Time-Domain Technique" by J.M. Carcione and F. Cavallini

"CCM: Circular Cylinders Modeler for Electromagnetic Scattering from Composite Two
Dimensional Objects" by A.Z. Eisherbeni and C.D. Taylor

"Determination of Velocity and Attenuation of Surface Acoustic Waves in Layered
Piezoelectric Media" by R. Weigel, U. Rosler, H. Meier and P. Russer

"An Application of Mini-Max Criterion For LSM-LSE Modes Determination In
Ferrite-Dielectric Loaded Waveguides" by B.Y. Kapilevich and T.A. Rahman

AUTHOR INDEX