

Raj Mittra Publications - 2010

- A. Yagbasan, C. A. Tunc, V. B. Erturk, A. Altintas, R. Mittra, "Characteristic basis function method for solving electromagnetic scattering problems over rough terrain profiles," *IEEE Transactions on Antennas and Propagation*, Vol.58, No.5, pp.1579-1589, May 2010.
- C. Giovampaola, R. Mittra, K. Du, Kai, A.Toccafondi, "Interpolation scheme for efficient computation of the reaction terms in the Characteristic Basis Functions Method (CBFM)," *2010 Proceedings of the Fourth European Conference on Antennas and Propagation (EuCAP)*, pp.1-4, April 2010.
- G. Bianconi, S. Genovesi, A. Monorchio, R. Mittra, K. Du, "A technique for efficient evaluation of the multilayered Green's function for frequency sweep analysis of planar microstrip structures," *Antennas and Wireless Propagation Letters, IEEE*, Vol. 9, pp.428-431, 2010.
- L. Hu; L.-W. Li, R. Mittra, "Electromagnetic scattering by finite periodic arrays using the characteristic basis function and adaptive integral methods," *IEEE Transactions on Antennas and Propagation*, Vol.58, No.9, pp.3086-3090, Sep. 2010.
- O. Ozgun, R. Mittra, M. Kuzuoglu, "PO-Based Characteristic Basis Finite Element Method (CBFEM-PO)—A parallel, iteration-free domain decomposition algorithm using perfectly matched layers for large-scale electromagnetic scattering problems," *Microwave and Optical Technology Letters*, Vol.52, No.5, pp. 1053, 2010.
- R. Mittra, "Challenging issues arising in the broadband matching of small antennas and how we might solve them," *2010 IEEE Antennas and Propagation Society International Symposium (APSURSI)*, pp.1-1, July 2010 [S].
- R. Mittra, "International advisory committee," *2010 International Workshop on Antenna Technology (iWAT)*, pp.21-24, March 2010.
- R. Mittra, "Technical reviewers," *2010 International Workshop on Antenna Technology (iWAT)*, pp.25-25, March 2010.
- R. Mittra, Y. Li, K. Yoo, "A comparative study of directivity enhancement of microstrip patch antennas with using three different superstrates," *Microwave and Optical Technology Letters*, Vol.52, No.2, pp. 327–331, Feb. 2010.
- S.-L. Chen, K.-H. Lin, R. Mittra, "A measurement technique for verifying the match condition of assembled RFID tags," *IEEE Transactions on Instrumentation and Measurement*, Vol.59, No.8, pp.2123-2133, Aug. 2010.
- T. Itoh, R. Mittra, "A new method for measuring dielectric properties of material media using a microstrip cavity," *1973 IEEE G-MTT International Microwave Symposium*, pp.138-139, June 2010 [S].
- T. Itoh, R. Mittra, "New waveguide structures for millimeter-wave integrated circuits," *1975 IEEE-MTT-S International Microwave Symposium*, pp.277-280, June 2010 [S].

W. Yu, R. Mittra, X. Yang, Y. Liu, Q. Rao, A. Muto, "High-performance conformal FDTD techniques," *IEEE Microwave Magazine*, pp.42-55, June 2010.

W. Yu, X. Yang, Y. Liu, R. Mittra, "High performance simulation techniques using parallel processing FDTD method," *2010 Asia-Pacific Symposium on Electromagnetic Compatibility (APEMC)*, pp.885-888, 12-16 April 2010, [S].

Y. Li, R. Mittra, L. Guizhen, "Scattering of a gaussian beam by a 'holey' dielectric slab," *2010 IEEE Antennas and Propagation Society International Symposium (APSURSI)*, pp.1-4, July 2010 [S].

O. Ozgun, R. Mittra, M. Kuzuoglu, "Solution of large scattering problems using a multilevel scheme in the context of Characteristic Basis Finite Element Method," *2010 IEEE Antennas and Propagation Society International Symposium (APSURSI)*, pp.1-4, July 2010 [S].

O. Ozgun, R. Mittra, M. Kuzuoglu, "General purpose characteristic basis finite element method of multiscale electrostatic and electromagnetic problems," *Electromagnetics*, Vol.30, No.1, pp. 205-221, 2010.

O. Ozgun, R. Mittra, M. Kuzuoglu, "Finite element/dipole moment method for efficient solution of multiscale electromagnetic problems," *2010 IEEE Antennas and Propagation Society International Symposium (APSURSI)*, pp.1-4, July 2010 [S].

R. Mittra, J. N. Bringuer, "A technique for solving multiscale problems in CEM utilizing dipole moments and macro basis functions," *2010 Proceedings of the Fourth European Conference on Antennas and Propagation (EuCAP)*, pp.1-3, April 2010.

R. Mittra, J. N. Bringuer, "A hybrid multiscale FDTD methodology for modeling fine features in body-centric communication systems," *2010 Proceedings of the Fourth European Conference on Antennas and Propagation (EuCAP)*, pp.1-3, April 2010.

R. Mittra, "Report on iWAT2010 in Lisbon, Portugal," *IEEE Antennas and Propagation Magazine*, Vol.52, No.3, pp.129-133, June 2010.

R. Mittra, "Some challenging issues arising in the design of communication antennas - Large and small," *2010 8th International Conference on Communications (COMM)*, pp.3-6, June 2010.

W. Yu; Y. Liu; X. Yang, A. Muto, R. Mittra, "A comparative study of hardware acceleration techniques in computational electromagnetics (CEM)," *2010 IEEE Antennas and Propagation Society International Symposium (APSURSI)*, pp.1-4, July 2010 [S].

C. D. Giovampaola, R. Mittra, A. Toccafondi, "Accurate and efficient evaluation of fields radiated at arbitrary distances by numerically-defined currents residing on arbitrarily shaped objects," *2010 IEEE Antennas and Propagation Society International Symposium (APSURSI)*, pp.1-4, July 2010 [S].

J. N. Bringuer, R. Mittra, "A new technique for modeling in-body and on-body antennas," *2010 Proceedings of the Fourth European Conference on Antennas and Propagation (EuCAP)*, pp.1-3, April 2010.

J. Bringuier, R. Mittra, "A hybrid FDTD method for modeling complex objects with sub-cellular features," *2010 IEEE Antennas and Propagation Society International Symposium (APSURSI)*, pp.1-4, July 2010 [S].

N.-T. Huang, R.Mittra, S. Hay, "Numerical study of the effect of the struts in a reflector antenna system by usin the parallelized FDTD-based solver GEMS," *2010 IEEE Antennas and Propagation Society International Symposium (APSURSI)*, pp.1-4, July 2010 [S].

K.Yoo, R.Mittra, "A novel technique for the analysis of periodic structures including EBGs," *2010 IEEE Antennas and Propagation Society International Symposium (APSURSI)*, pp.1-4, July 2010 [S].

G. Giovannetti, V. Viti, V. Hartwig, Y. Liu, W. Yu, R. Mittra, L. Landini, A. Benassi, "Electromagnetic method for sample-induced resistance calculation of magnetic resonance coils," *International Journal of Biomedical Engineering and Technology*, Vol.4, No.1, pp.18-28, 2010.

Y. Zhang, R. Mittra, W. Hong, "Systematic design of planar lenses using artificial dielectrics," *2010 IEEE Antennas and Propagation Society International Symposium (APSURSI)*, pp.1-4, July 2010 [S].

R. Mittra, "A new CEM algorithm for solving real-world antenna and scattering problems," *2010 Proceedings of the Fourth European Conference on Antennas and Propagation (EuCAP)*, pp.1-3, April 2010.

Y.X. Gong, R. Mittra, L. Zhen, W.Z. Shao, "Design of a two-layer ultra-wideband microwave absorber," *2010 IEEE Antennas and Propagation Society International Symposium (APSURSI)*, pp. 1-4, 2010 [S].

J.N. Bringuier, R. Mittra, "An approach for solving the time domain electric field integral equation (TD-EFIE) utilizing a novel basis function," *2010 URSI International Symposium on Electromagnetic Theory (EMTS)*, pp. 453-455, 2010 [S].

F.S. de Adana, M.F. Cátedra, J.M. Gómez, R. Mittra, J. Berkowitsch, F. Gutiérrez, M. Alfonsea, "A systematic approach for radiated system-level verification of unknown sources inside satellites from unit-level measurements," *IEEE Antennas and Propagation Magazine*, Vol.52, No.2, pp.71-85, 2010.

C. Pelletti, K. Panayappan, R. Mittra, A. Monorchio, "Numerical solutions of scattering from metalodielectric composites via the CBFM applied in conjuction with the dipole moment approach (DMA)," *2010 IEEE Antennas and Propagation Society International Symposium (APSURSI)*, pp.1-4, 2010 [S].

W. Yu, X. Yang, Y. Liu, R. Mittra, "High performance simulation techniques using parallel processing FDTD method," *2010 Asia-Pacific Symposium on Electromagnetic Compatibility (APEMC)*, pp.885-888, 2010 [S].

S.-L. Chen, R. Mittra, "Indirect coupling method for RFID tag antenna design," *Electronics Letters*, Vol.46, No.1, pp.8-10, [2010].

S.-L. Chen, K.-H. Lin, R. Mittra, "A measurement technique for verifying the match condition of assembled RFID tags," *IEEE Transactions on Instrumentation and Measurement*, Vol.59, No.8, pp.2123-2133, 2010.

C. Pelletti, K. Panayappan, R. Mittra, A. Monorchio, "On the hybridization of RUFD algorithm with the DM approach for solving multiscale problems," *2010 URSI International Symposium on Electromagnetic Theory (EMTS)*, pp.850-852, 2010 [S].

A. Solovey, M. Wasson, R. Mittra, "Free space transmission loss measurement of magneto-dielectric materials: Solution uniqueness and measurement tolerance tradeoffs," *2010 European Microwave Conference*, pp.1587-1590, 2010.

Y. Li, K. Yoo, R. Mittra, G. Lu, D. Zeng, Y. Guan, "Directivity enhancement of microstrip antennas using dielectric superstrates," *2010 International Conference on Applications of Electromagnetism and Student Innovation Competition Awards (AEM2C)*, pp.206-209, 2010.

R. Mittra, "Challenging issues arising in the broadband matching of small antennas and how we might solve them," *2010 IEEE Antennas and Propagation Society International Symposium (APSURSI)*, pp.1-1, 2010 [S].

R. Mittra, N. Mehta, K. Yoo, "A new technique for the simulation of periodic structures including EBGs and metamaterials," *2010 International Workshop on Antenna Technology (iWAT)*, pp.1-2, 2010.

S.L. Chen, R. Mittra, "A long read range RFID tag design for metallic objects," *2010 Proceedings of the Fourth European Conference on Antennas and Propagation (EuCAP)*, pp.1-3, 2010.

L. Li, W. Yu, R. Mittra, "Computation of SAR levels in SAM's head model located inside an automobile via the parallel FDTD algorithm," *2010 International Conference on Applications of Electromagnetism and Student Innovation Competition Awards (AEM2C)*, pp.24-28, 2010.

R. Mittra, "A look at real-world metamaterial applications: A practitioner's viewpoint," *2010 European Microwave Conference (EuMC)*, pp.1782-1785, 2010.

J. N. Bringuer, R. Mittra, "A new technique for modeling in-body and on-body antennas," *2010 Proceedings of the Fourth European Conference on Antennas and Propagation (EuCAP)*, pp.1-3, 2010.

G. Bianconi, R. Mittra, K. Du, S. Genovesi, A. Monorchio, "A new technique for efficient simulation of RF and microwave circuits in layered media using the Equivalent Medium Approach combined with CBFM," *2010 URSI International Symposium on Electromagnetic Theory (EMTS)*, pp.265-268, 2010 [S].

R. Mittra, N.-T. Huang, "Verification of cloak designs based on transformation optics via rigorous numerical simulation," *2010 Proceedings of the Fourth European Conference on Antennas and Propagation (EuCAP)*, pp.1-4, 2010.

I. Ahmed, E. H. Khoo, E. Li, R. Mittra, "A hybrid approach for solving coupled Maxwell and Schrödinger equations arising in the simulation of nano-devices," *IEEE Antennas and Wireless Propagation Letters*, Vol.9, pp.914-917, 2010.

J. N. Bringuer, R. Mittra, "Full-wave simulation of Body Area Networks using the FDTD method," *2010 URSI International Electromagnetic Theory (EMTS)*, pp.327-328, 2010.

R. Mittra, K. Yoo, "A new technique for the numerical simulation of periodic structures including DBGs, FSSs and metamaterials," *2010 International Conference on Applications of Electromagnetism and Student Innovation Competition Awards (AEM2C)*, pp.14-18, 2010.

R. Mittra, "New strategies in computational electromagnetics for solving real-world problems," *2010 Loughborough Antennas and Propagation Conference (LAPC)*, pp.2-8, 2010.

G. Bianconi, R. Mittra, K. Du, S. Genovesi, A. "A new technique for efficient simulation of microstrip circuits etched in layered media," *2010 IEEE Antennas and Propagation Society International Symposium (APURSI)*, pp.1-4, 2010 [S].

C. Pelletti, K. Panayappan, R. Mittra, A. Monorchio, "Singularity-free approach for the evaluation of the matrix elements in the context of the method of moments based on the use of closed-form expressions for the fields radiated by the subdomain basis functions," *2010 IEEE Antennas and Propagation Society International Symposium*, pp.1-4, 2010 [S].

K.H. Lin, S.L. Chen, R. Mittra, "A capacitively coupling multifeed slot antenna for metallic RFID tag design," *IEEE Antennas and Wireless Propagation Letters*, Vol.9, pp.447-450, 2010.

R. Mittra, X. Yang, K. Panayappan, W. Yu, "RUFD: A general-purpose, non-iterative and matrix-free CEM algorithm for solving electromagnetic scattering and radiation problems in the frequency domain," *2010 URSI International Symposium on Electromagnetic Theory (EMTS)*, pp.171-174, 2010 [S].

R. Mittra, K. Panayappan, C. Pelletti, A. Monorchio, "A universal dipole-moment-based approach for formulating MoM-type problems without the use of Green's function," *2010 Proceedings of the Fourth European Conference on Antennas and Propagatoins (EuCAP)*, pp.1-3, 2010

O. Ozgun, R. Mittra, M. Kuzuoglu, "General-purpose characteristic basis finite element method for multi-scale electrostatic and electromagnetic problems," *Electromagnetics*, Vol.30, No.1&2, pp.205-221, January 2010.

A. Solovey, M. Wasson, R. Mittra, "Free space transmission loss measurement of magneto-dielectric materials: Solution uniqueness and measurement tolerance tradeoffs," *2010 European Microwave Conference (EuMC)*, pp.1587-1590, Sep. 2010.

W. Yu, X. Yang, Y. Liu, R. Mittra, "On study of large symmetric antenna simulation using parallel FDTD method," *2010 International Conference on Applications of Electromagnetism and Student Innovation Competition Awards (AEM2C)*, pp.14-18, Aug. 2010.