

# IEEE TRANSACTIONS ON ELECTROMAGNETIC COMPATIBILITY

A PUBLICATION OF THE IEEE ELECTROMAGNETIC COMPATIBILITY SOCIETY

**EMC**  
SOCIETY

AUGUST 2011

VOLUME 53

NUMBER 3

IEMCAE

(ISSN 0018-9375)

## EMC MEASUREMENTS

### Reverberation Chambers

- Bivariate Statistical Approach for "Good-but-Imperfect" Electromagnetic Reverberation.....R. Serra and F. G. Canavero 554
- On the Shielding Effectiveness of Small-Dimension Enclosures Using a Reverberation Chamber.....Q. Wang, E. Cheng, and Z. Qu 562
- Deterministic Approach to Estimate the Upper Bound of the Electric Field in a Reverberation Chamber.....A. Gifuni 570
- Shielding Effectiveness of a Thick Multilayered Panel in a Reverberating Environment.....D. A. Lampasi and M. S. Sarto 579
- Static and Dynamic Propagation-Channel Impairments in Reverberation Chambers.....  
.....K. A. Remley, S. J. Floris, H. A. Shah, and C. L. Holloway 589

### TEM Cells

- Unbalanced Currents in Integrated Circuits and Their Effect on TEM Cell Emissions.....  
.....K. Hu, H. Weng, D. G. Beetner, D. Pommerenke, and J. Drewniak 600

## ELECTROMAGNETIC ENVIRONMENT

### Electrostatic Discharge

- Systematic Analysis Methodology for Mobile Phone's Electrostatic Discharge Soft Failures.....K. H. Kim and Y. Kim 611

### Human Exposure and SAR

- A Comparison of Specific Absorption Rates in SAM Phantom and Child Head Models at 835 and 1900 MHz...A.-K. Lee and J. Yun 619
- Evaluation and Optimization of the Specific Absorption Rate for Multiantenna Systems.....  
.....M. Wang, L. Lin, J. Chen, D. Jackson, W. Kainz, Y. Qi, and P. Jarmuszewski 628

### Interference

- Measurement and Assessment of Exposure Limits for the Static Magnetic Field Generated by Large Inductors for Railway Applications.....  
.....S. A. Pignari, G. Spadacini, and E. Fedeli 638

### Complex Environment

- Generalized Isolation Between Antennas for EMC Problems in Complex EM Environments.....  
.....C.-H. Liang, X.-J. Dang, N. Wang, and H.-B. Yuan 645
- Estimation of Impulsive Noise in an Electricity Substation.....Q. Shan, I. A. Glover, R. C. Atkinson, S. A. Bhatti, I. E. Portuguese, P. J. Moore, R. Rutherford, M. de Fátima Queiroz Vieira, A. M. N. Lima, and B. A. de Souza 653
- Channel Characterization and EMC Assessment of a PLC System for Spacecraft DC Differential Power Buses.....  
.....F. Grassi, S. A. Pignari, and J. Wolf 664

(Contents Continued on Page 553)

请阅后放回:

排架号 **EA2** 处

 **IEEE**



ELECTROMAGNETIC INTERFERENCE CONTROL

*Noise Reduction*  
Modeling and Characterization of Incomplete Shielding Effect of GND on Common-Mode EMI of a Power Converter ..... *H. Chen, C. Chen, and Y. Ren* 676

*Material Characterization*  
Calibration-Independent and Position-Insensitive Transmission/Reflection Method for Permittivity Measurement With One Sample in Coaxial Line ..... *Z. Caijun, J. Quanxing, and J. Shenhui* 684

*Protection*  
Effective Protection Distances of SPDs for Household Electrical Appliances ..... *C. Li, J. He, Z. Yu, Z. Yuan, S. Wang, J. Hu, R. Zeng, and S. Chen* 690

*Shielding*  
Ultrathin and Flexible Screen-Printed Metasurfaces for EMI Shielding Applications ..... *L. B. Wang, K. Y. See, J. W. Zhang, B. Salam, and A. C. W. Lu* 700  
Shielding Effectiveness of Periodic Screens Against Finite High-Impedance Near-Field Sources ..... *R. Araneo, G. Lovat, and S. Celozzi* 706

*Filter*  
Hybrid Microstrip T-Stub/Defected Ground Structure Cell for Electromagnetic Interference Bandpass Filter Design ..... *X. Luo, J.-G. Ma, E.-P. Li, and K. Ma* 717

ELECTROMAGNETIC MODELING

Application of the Partial Element Equivalent Circuit Method to Analysis of Transient Potential Rises in Grounding Systems ..... *P. Yuthagowith, A. Ametani, N. Nagaoka, and Y. Baba* 726

HIGH POWER ELECTROMAGNETICS

*EMP*  
Development of the Time Dependence of the Nuclear (E1) HEMP Electric Field ..... *C. D. Eng* 737

*Lightning*  
Effect of the Surface Impedance on the Induced Voltages in Overhead Lines From Nearby Lightning ..... *J. O. S. Paulino, C. F. Barbosa, and W. do Couto Boaventura* 749  
Time-Domain Implementation of Cooray-Rubinstein Formula via Convolution Integral and Rational Approximation ..... *F. Delfino, P. Girdinio, R. Procopio, M. Rossi, and F. Rachidi* 755  
Investigation on the Sources of Reflection at the Junction of Tall Grounded Object and Lightning Channel ..... *R. B. Raysaha and U. Kumar* 764  
Engineering Lightning Return Stroke Models Incorporating Current Reflection From Ground and Finitely Conducting Ground Effects ..... *V. Cooray and V. A. Rakov* 773  
A Macroscopic Model for First Return Stroke of Lightning ..... *R. B. Raysaha, U. Kumar, and R. Thottappillil* 782  
On the Measurement and Calculation of Horizontal Electric Fields From Lightning ..... *A. Shoory, F. Rachidi, M. Rubinstein, and R. Thottappillil* 792

PRINTED CIRCUIT BOARDS, INTERCONNECTS, AND SIGNAL INTEGRITY

Voltage and Return Plane Bounce Affecting Digital Components Using Different Printed Circuit Board Edge Termination Methodologies ..... *M. I. Montrose* 802  
DC-DC Buck Converter EMI Reduction Using PCB Layout Modification ..... *A. Bhargava, D. Pommerenke, K. W. Kam, F. Centola, and C. W. Lam* 806  
Mixed-Mode ABCD Parameters: Theory and Application to Signal Integrity Analysis of PCB-Level Differential Interconnects ..... *J. Cho, E. Song, H. Kim, S. Ahn, J. S. Pak, J. Kim, and J. Kim* 814

WIRELESS TECHNOLOGY

Analysis on Coexistence of Ultra Wideband with OFDM-Based Communication Systems ..... *Z. Li, W. Zou, B. Li, Z. Zhou, and X. Huang* 823  
Effect of the User's Hands on the Operation of Lower UHF-Band Mobile Terminal Antennas: Focus on Digital Television Receiver ..... *J. Holopainen, O. Kivekäs, J. Ilvonen, R. Valkonen, C. Icheln, and P. Vainikainen* 831

SHORT PAPERS

Analytical Solutions for the Radiated Emission of Parallel Microstrip Traces ..... *B.-C. Tseng, L.-C. Liao, L.-K. Wu, and H.-T. Lung* 842  
Time-Dependent Model of RF Energy Propagation in Coupled Reverberant Cavities ..... *G. B. Tuit, R. E. Richardson, M. B. Slocum, and M. O. Hatfield* 846  
A Case Study on Lightning Protection, Building Resonances Considered ..... *A. P. J. van Deursen and G. Bargboer* 849  
Harmonization of a Bandpass Shielding Enclosure and Its Internal Antenna ..... *C.-N. Chiu and K.-C. Huang* 853

CORRESPONDENCE

Corrections to "Full Wave Simulation of an Electrostatic Discharge Generator Discharging in Air Discharge Mode Into a Product" ..... *J. Xiaq, D. Liu, and D. Pommerenke* 859