

Curriculum Vitae: Prof. Dr. Giulio Antonini

Personal information

Date of birth: January 5, 1969.

Place of birth: Avezzano (AQ), ITALY

Contact information

Dipartimento di Ingegneria Elettrica e dell'Informazione

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Research interests

Computational electromagnetics, transmission lines modeling, rational macromodeling, fast and robust numerical algorithms for computer-aided-design, circuit simulation, signal and power integrity analysis.

Education

- 1994 Laurea Degree (with highest honors) in Electrical Engineering, Università degli Studi dell'Aquila, dissertation: "Electromagnetic characterization of *Switched Mode Power Supplies: circuit models and experimental verification*" (Advisor Prof. Saverio Cristina, Co-advisor Prof. Antonio Orlandi).
- 1995-1998 Ph.D. program. Thesis: "*Circuit techniques for the analysis of electromagnetic compatibility problems*", April 1998.
- 1997 Visiting Scholar at Laboratoire d'Electrotechnique LEG-ENSIEG de Grenoble, (supervisor Prof. James Roudet) where he worked on models for radiated emissions from electrical power drives.
- 1998 Summer Student at IBM T. J. Watson Research Center, Yorktown Heights NY, USA, (supervisor Dr. A. E. Ruehli), where he worked on the developments of nonorthogonal PEEC models.
- 1999 Visiting Scholar at IBM T. J. Watson Research Center, Yorktown Heights NY, USA, (supervisor Dr. A. E. Ruehli), where he worked numerical techniques to accelerate the analysis of large PEEC circuits.
- 2000 Visiting Scholar at IBM T. J. Watson Research Center, Yorktown Heights NY, USA, (supervisor Dr. A. E. Ruehli), where he worked on higher order basis functions for PEEC modeling

Employment

Presente-23 Dicembre 2016

22 Dicembre 2016-23 Dicembre 2013

December 2013 - November 2005

October 2005 - December 2001

December 2001 - September 1998

Professore Ordinario

Professore Straordinario di Elettrotecnica

Associate Professor (Università degli Studi dell'Aquila)

Senior Researcher (Università degli Studi dell'Aquila)

Researcher (Università degli Studi dell'Aquila)

Honors and awards

1. IEEE Electromagnetic Compatibility Society 1998 Prize Paper Award for the paper:

- G. Antonini, S. Cristina, A. Orlandi, “**A Spice Model for Near Field Transient Analysis of Ferromagnetic Grids**”, *IEEE Transactions on Electromagnetic Compatibility*, vol. 39, n. 2, pp. 114-122, May 1997.
2. 2004 IBM Shared University Research (SUR) Award (*PEEC modeling of lossy and dispersive dielectrics*).
 3. 2005 IBM Shared University Research (SUR) (*Equivalent circuit modeling of large ASICs for power integrity analysis*).
 4. 2006 IBM Shared University Research (SUR) Award (*A tool for computational electromagnetic validation (FSV)*).
 5. 2004 CST University Publication Award for the paper:
G. Antonini, A. Ciccomancini Scogna, A. Orlandi, “**S-Parameters Characterization of Through, Blind and Buried Via Holes**”, *IEEE Transactions on Mobile Computing*, vol. 2, n. 2, pp. 174-184, April-June 2003.
 6. IEEE Electromagnetic Compatibility Society Technical Achievement Award “For innovative contributions to computational electromagnetic on the Partial Element Equivalent Circuit (PEEC) technique for EMC applications”.
 7. 2007 IET Science, Measurement and Technology Best Paper Award for the paper:
G. Antonini, “**Innovative Method for Modelling Tree Structured Interconnects**”, *IET Science, Measurements and Techniques*, vol. 1, n. 3, pp. 170-178, May 2007.
 8. EMC Society Distinguished Lecturer, 2010-2011.
 9. *IEEE EMC Society Certificate of recognition*.
 10. Best Paper Award: C. Gianfagna, R. Pulugurtha, M. Swaminathan, G. Antonini, “**Enabling Antenna Design with Nano-Magnetic Materials Using Machine Learning**”, in *Proc. of NMDC 2015*, Anchorage, Alaska.
 - 11.

Publications

Book	2
Book chapters:	2
Peer reviewed journals:	126
International conferences:	176
Tutorial lectures	30

Editorial activities

1. Editorial Board Member, IET-Science, Measurements and Techniques, (2007-present).
2. Associate Editor IET-Science, Measurements and Techniques, (2016-present).
3. Editor for Tutorial Papers, Applied Computational Electromagnetics Newsletter, (2005-2012).
4. Reviewer of the following international journals:
 - *IEEE Trans. on Electromagnetic Compatibility*
 - *IEEE Trans. on Microwave and Techniques*
 - *IEEE Trans. on Components, Packaging and Manufacturing Technology*
 - *IEEE Microwave and Wireless Components Letters*
 - *IEEE Transactions on Circuits and Systems-Part-I*
 - *IEEE Transactions on Circuits and Systems-Part-II*
 - *IEEE Transactions on Computer Aided Design*
 - *IET Science, Measurements and Techniques*
 - *Applied Computational Electromagnetics Journal*
 - *IEEE Transactions on Power Delivery*

- *Electronic Letters*
 - *Journal of Microelectronics*
5. Reviewer of the book "Inductances", C. R. Paul, Wiley & Sons.

Professional Membership and activities:

IEEE member
 IEEE EMC Society Member
 IEEE EMC Italy Chapter Chair
 IEEE EMC Society TC-10 past-Chair
 IEEE EMC Society TC-9 Member

Journal publications

- [J1] G.Antonini, S.Cristina, A.Orlandi, "**EMC Characterization of SMPS Devices: Circuit and Radiated Emissions Model**", *IEEE Trans. Electromag. Compatibility*, Vol. 38, n. 3, pp. 300-309, Agosto 1996. Lavoro invitato "Special issue on *EMC Research in Italy*".
- [J2] G. Antonini, S.Cristina, A.Orlandi, "**A Spice Model for Near Field Transient Analysis of Ferromagnetic Grids**", *IEEE Trans. Electromag. Compatibility*, vol.39, n.2, pp. 114-122, Maggio 1997. IEEE Electromagnetic Compatibility Society 1998 Prize Paper Award.
- [J3] G. Antonini, S. Cristina, A. Orlandi, "**PEEC Modeling of Lightning Protection Systems: Full-Wave Formulation and Circuit Solution**", *IEEE Trans. on Electromag. Compatibility*, vol. 40 n. 4, pp. 481 - 491, Novembre 1998. Lavoro invitato "Special issue on *Lightning*".
- [J4] G.Antonini, A.Orlandi, C.Paul, "**Internal Impedance of Conductors of Rectangular Cross Section**", *IEEE Transactions on Microwave Theory Tech*, vol. 47, n.7, pp. 979-985, Luglio 1999.
- [J5] G.Antonini, S.Cristina, A.Orlandi, "**A Prediction Model for Electromagnetic Interferences Radiated by an Industrial Power Drive System**", *IEEE Trans.on Industry Applications*, vol. 35, n.4, pp. 870-876, Luglio/Agosto 1999.
- [J6] G.Antonini, A.Orlandi, "**Lightning Induced Effects on Lossy MTL Terminated on Arbitrary Loads: a Wavelet Approach**", *IEEE Trans. on Electromag. Compatibility*, vol. 42, n. 2, pp. 181-189, Maggio 2000.
- [J7] G.Antonini, A.Orlandi, "**Gradient Evaluation for Neural Networks-Based Electromagnetic Optimization Procedures**", *IEEE Transactions on Microwave Theory Tech*, vol. 48, n.5, pp. 874-876, Maggio 2000.
- [J8] G.Antonini, A.Orlandi, "**A Wavelet Based Time Domain Solution for PEEC Circuits**", *IEEE Transactions on Circuits and Systems-I:Fundamental Theory and Applications*, vol. 47, n.11, pp.1634-1639, Novembre 2000.
- [J9] G. Antonini, A.Orlandi, "**Wavelet Packet-Based EMI Signal Processing and Source Identification**", *IEEE Trans. on Electromag. Compatibility*, vol. 43, n. 2, pp. 140-148, Maggio 2001.
- [J10] G. Antonini, A. Orlandi, C.R. Paul, "**Comments on "Internal impedance of conductors of rectangular cross section - Authors' Reply"**", *IEEE Transactions on Microwave Theory Tech.*, vol. 49, n.8, pp. 1512-1513, Maggio 2001.

- [J11] G. Antonini, A. Orlandi, C. Sartori, J. R. Cardoso, C. C. B. Oliveira, "**Constrained Decision Planning Applied to Field Profile Optimization in LPS of Structures Directly Struck by Lightning**", *IEEE Trans. on Magnetics*, vol. 38, n. 2, pp. 757-760, Marzo 2002.
- [J12] G. Antonini, A. Orlandi, A. Ruehli, "**Analytical Integration of Quasi-Static Potential Integrals of Non-Orthogonal Coplanar Quadrilaterals for the PEEC Method**", *IEEE Transactions on Electromag. Compatibility*, vol. 44, n. 2, pp. 399-403, Maggio 2002.
- [J13] G. Antonini, J. Drewniak, A. Orlandi, V. Ricchiuti, "**Eye Pattern Evaluation in High Speed Digital Systems Analysis**" *IEEE Transactions on Microwave Theory Tech.*, vol. 50, n.7, pp. 1807-1815, Luglio 2002.
- [J14] G. Antonini, A. Ciccomancini Scogna, A. Orlandi, "**Equivalent Network Synthesis for Via Holes Discontinuities**" in *IEEE Transactions on Advanced Packaging*, vol. 25, n. 4, pp. 528-536, Novembre 2002.
- [J15] G. Antonini, A. Orlandi, S. D'Elia, "**Shielding Effects of Reinforced Concrete Structures to Electromagnetic Fields Due to GSM and UMTS Systems**", in *IEEE Trans. on Magnetics*, vol. 39, n. 3, pp. 1582-1585, Maggio 2003.
- [J16] G. Antonini, A. Ruehli, A. Mayo, J. Esch, J. Ekman, A. Orlandi, "**Non-Orthogonal PEEC Formulation for Time and Frequency Domain EM and Circuit Modeling**", in *IEEE Transactions on Electromagnetic Compatibility*, vol. 45, n.2, pp. 167-176, Maggio 2003.
- [J17] G. Antonini, A. Ciccomancini Scogna, A. Orlandi, "**S-Parameters Characterization of Through, Blind and Buried Via Holes**", in *IEEE Transactions on Mobile Computing*, vol. 2, n. 2, pp. 174-184, Aprile-Giugno 2003.
- [J18] G. Antonini, "**Spice Equivalent Circuits of Frequency Domain Responses**", in *IEEE Transactions on Electromagnetic Compatibility*. vol. 45, n.3, pp. 502-512, Agosto 2003.
- [J19] G. Antonini, A. Ruehli, "**Fast Multipole and Multi-Function PEEC Methods**", in *IEEE Transactions on Mobile Computing*, vol. 2, n. 4, pp. 288-298, Ottobre-Dicembre 2003.
- [J20] G. Antonini, "**Fast Multipole Method for Time Domain PEEC Analysis**", in *IEEE Transactions on Mobile Computing*, vol. 2, n. 4, pp. 275-287, Ottobre-Dicembre 2003.
- [J21] G. Antonini, A. Orlandi, "**Spice Equivalent Circuit of a Two-Parallel Wires Shielded Cable for Evaluation of the RF Induced Voltages at the Terminations**", in *IEEE Transactions on Electromagnetic Compatibility*, vol. 46, n. 2, pp. 189-198, Maggio 2004.
- [J22] G. Antonini, A. Ciccomancini Scogna, A. Orlandi, "**Grounding, Unbalancing and Length Effects on Termination Voltages of a Twinax-Cable During Bulk Current Injection**", in *IEEE Transactions on Electromagnetic Compatibility*, vol. 46, n. 2, pp. 302-308, Maggio 2004.
- [J23] G. Antonini, G. Ferri, "**A Compact Representation of Transmission Lines**", *IEE Proceedings on Science, Measurements and Techniques*, Vol. 151, n. 3, pp. 64-72, Maggio 2004.
- [J24] G. Antonini, "**A New Methodology for the Transient Analysis of Lossy and Dispersive Multiconductor Transmission Lines**", in *IEEE Transactions on Microwave Theory Tech.*, Special Issue on Model Order Reduction Methods, vol. 52, n. 9, pp. 2227-2239, Settembre 2004.

- [J25] G. Antonini, A. Ciccomancini Scogna, A. Orlandi, “**De-embedding Procedure Based on Computed/Measured Data Set for PCB Structures Characterization**”, in *IEEE Transactions on Advanced Packaging*, vol. 27, n. 4, pp. 597-602, Novembre 2004.
- [J26] G. Antonini, G. Ferri, “**A New Approach for Closed-Form Transient Analysis of Multiconductor Transmission Lines**”, in *IEEE Transactions on Electromagnetic Compatibility*, vol. 46, n. 4, pp. 529-543, Novembre 2004 (**Best Paper Nomination**).
- [J27] M.Y. Koledintseva, J. L. Drewniak, D. J. Pommerenke, G. Antonini, A. Orlandi, K. N. Rozanov, “**Wideband Lorentzian Media in the FDTD Algorithm**”, in *IEEE Transactions on Electromagnetic Compatibility*, vol. 47, n.2, pp. 392-399, Maggio 2005.
- [J28] G. Antonini, G. Ferri, “**A Ladder Networks Delay Model for Coupled Interconnects**”, in *IEE Proceedings on Science, Measurements and Techniques*, vol. 153, n. 2, pp. 64-72, Marzo 2006.
- [J29] J. Ekman, G. Antonini, A. Orlandi, A. E. Ruehli, “**Impact of Partial Element Accuracy for PEEC Model Stability**”, in *IEEE Trans. on Electromagnetic Compatibility*, vol. 48, n. 2, pp. 19-32, Febbraio 2006.
- [J30] G. Antonini, A. Orlandi, “**Efficient Transient Analysis of Long Lossy Shielded Cables**”, in *IEEE Transactions on Electromagnetic Compatibility*, vol. 48, n. 2, pp. 42-56, Febbraio 2006.
- [J31] G. Antonini, “**Transient Analysis of Composite Right/Left Handed Metamaterials**”, in *Proceedings of the European Microwave Association*, n. 4, pp. 305-311, Dicembre 2006.
- [J32] A. Duffy, A. Martin, A. Orlandi, G. Antonini, T. M. Benson, M. Woolfson, “**Feature Selective Validation (FSV) for validation of Computational Electromagnetics (CEM). Part I – The FSV Method**”, in *IEEE Transactions on Electromagnetic Compatibility*, Vol. 48, n. 3, pp. 449-459, Agosto 2006.
- [J33] A. Duffy, A. Martin, A. Orlandi, G. Antonini, T. M. Benson, M. Woolfson, “**Feature Selective Validation (FSV) for validation of Computational Electromagnetics (CEM). Part II – Numerical Verification**”, in *IEEE Transactions on Electromagnetic Compatibility*, Vol. 48, n. 3, pp. 460-467, Agosto 2006.
- [J34] A. Orlandi, G. Antonini, R. M. Rizzi, “**Equivalent circuit model of bundle of cables for bulk current injection (BCI) test**”, *IEEE Trans. on Electromagnetic Compatibility.*, vol. 48, n. 4, pp. 701-713, Novembre 2006.
- [J35] G. Antonini, D. Dischrijver, T. Dhaene, “**Broadband Macromodels for Retarded Partial Element Equivalent Circuit (rPEEC) Method**”, in *IEEE Transactions on Electromagnetic Compatibility*, vol. 49, n. 1, pp. 35-48, Febbraio 2007.
- [J36] G. Antonini, “**PEEC Capacitance Extraction of 3-D Interconnects**”, in *IET Science, Measurements and Techniques*, vol. 1, n. 4, pp. 201-209, Luglio 2007.
- [J37] G. Antonini, “**Innovative Method for Tree Structured Interconnects**” in *IET Science, Measurements and Techniques*, vol. 1, n. 3, pp. 170-178, Maggio 2007. **2007 IET-SMT Best Paper Award.**
- [J38] G. Antonini, A. Orlandi, “**Time domain modeling of lossy and dispersive thin layers**”, in *IEEE Microwave Wireless and Components Letters*, vol. 17, n. 9, pp. 631-633, Settembre, 2007.

- [J39] G. Antonini, G. Ferri, "**Ladder Network based model for Interconnects and Transmission Lines Time Delay and Cutoff Frequency Determination**", in *Journal of Circuits, Systems and Computers*, vol. 16, n. 4, pp. 489-495, Agosto 2007.
- [J40] G. Antonini, "**A Low Frequency Accurate Cavity Model for Calculating Voltage Bounces in Power-Ground Structures**", in *IEEE Trans. on Electromagnetic Compatibility*, vol. 50, n. 1, pp. 138-148, Febbraio 2008.
- [J41] G. Antonini, D. Deschrijver, T. Dhaene, "**Broadband Rational Macromodeling Based on the Adaptive Frequency Sampling Algorithm and the Partial Element Equivalent Circuit Method**", *IEEE Transactions on Electromagnetic Compatibility*, vol. 50, n. 1, pp. 128-137, Febbraio 2008.
- [J42] G. Antonini, F. Ferranti, "**An Integral-Equation Based Approach for the Analysis of Tapered Transmission Lines**", in *IET Science, Measurements and Techniques*, vol. 2, n. 5, pp. 295-303, Settembre 2008.
- [J43] G. Antonini, "**A Dyadic Green's Function Based Method for the Transient Analysis of Lossy and Dispersive Multiconductor Transmission Lines**", in *IEEE Transactions on Microwaves Theory and Techniques*, vol. 56, n. 4, pp. 880-895, Aprile 2008.
- [J44] G. Antonini, "**A Green's Function Approach for the Transient Analysis of Lossy and Dispersive Planar Layers**", in *International Journal of Numerical Modelling: Electronic Networks, Devices and Fields*, vol. 21, n. 6, pp. 413-438, November/December 2008.
- [J45] G. Antonini, J. Zhang, M. Koledintseva, J. Drewniak, D. Pommerenke, R. DuBroff, Z. Yang, C. Rozanov, A. Orlandi, "**Reconstruction of dielectric material properties for dispersive substrates using a genetic algorithm**", in *IEEE Transactions on Electromagnetic Compatibility*, vol. 50, n. 3, pp. 704-714, Agosto 2008.
- [J46] G. Antonini, A. E. Ruehli, C. Yang, "**PEEC Modeling of Dispersive Dielectrics**", *IEEE Trans. on Advanced Packaging*, vol. 31, n. 4, pp. 768-782, Novembre 2008.
- [J47] G. Antonini, D. Deschrijver, T. Dhaene, "**Efficient power bus modeling based on an adaptive frequency sampling technique**", in *Wiley International Journal of Numerical Modelling: Electronic Networks, Devices and Fields*, vol. 22, n. 1, pp. 57-76, Gennaio/Febraio 2009.
- [J48] G. Antonini, L. De Camillis, F. Ruscitti, "**A spectral approach to frequency-domain sensitivity analysis of multiconductor transmission lines**", *IEEE Microwave Wireless and Components Letters*, vol. 19, n. 2, pp. 65-67, Febbraio 2009.
- [J49] G. Antonini, "**A Closed-Form Rational Model of Right/Left-Handed Coupled Ladder Networks**", *Applied Computational Electromagnetic Society Journal*, vol. 24, n. 1, pp. 45-55, Febbraio 2009.
- [J50] G. Antonini, P. Pepe, "**Input-to-State Stability Analysis of Partial Element Equivalent Circuit Models**", *IEEE Trans. on Circuits and Systems-Part I*, vol. 56, n. 3, pp. 673-684, Marzo 2009.
- [J51] A. Di Pasquale, G. Antonini, A. Orlandi, "**Shielding Effectiveness for a Three-Phase Transformer at Various Harmonic Frequencies**", *IET-Science Measurement and Techniques*, vol. 3, n. 2, pp. 175-183, Aprile 2009.

- [J52] G. Antonini, L. De Camillis, “**Time-Domain Green's Function-Based Sensitivity Analysis of Multiconductor Transmission Lines With Nonlinear Terminations**”, *IEEE Microwave Wireless and Components Letters*, vol. 19, n. 7, pp. 428 - 430, Luglio 2009.
- [J53] G. Antonini, “**A Spectral Formulation for the Transient Analysis of Plane-Wave-Coupling to Multiconductor Transmission Lines**”, *IEEE Trans. on Electromagnetic Compatibility*, vol. 51, n. 3, part II, pp. 792-804, Agosto 2009. (**Best Paper Nomination**).
- [J54] G. Antonini, L. De Camillis, F. Ruscitti, “**Sensitivity analysis of microstrip transmission lines**”, *Applied Computational Electromagnetic Society Journal*, vol. 24, n. 4, pp. 352-360, Agosto 2009.
- [J55] M. Di Clerico, G. Antonini, A. Orlandi, V. Ricchiuti, S. Santucci, “**Design of a Test Vehicle for Nanowire Characterization for Signal Integrity Applications**”, *Turk J. Elec. Eng. and Comp. Sci.*, vol. 17, n. 3, 2009.
- [J56] G. Antonini, “**Advanced models for time domain analysis of anisotropic sheets**”, in *Wiley International Journal of Numerical Modelling: Electronic Networks, Devices and Fields*, Vol. 23, n. 1, 2010, pp. 1-19.
- [J57] G. Antonini, D. Frigioni, G. Miscione, “**Hybrid Formulation of the Equation Systems of the 3-D PEEC Model Based on Graph Algorithms**”, *IEEE Trans. on Circuits and Systems-Part I*. Vol. 57, n. 1, January 2010, pp. 249 – 261.
- [J58] J. Zhang, M. Y. Koledintseva, R. E. DuBroff, D. J. Pommerenke, J. L. Drewniak, G. Antonini, A. Orlandi, “**Planar Transmission Line Method For Characterization Of Printed Circuit Board Dielectrics**”, *Progress in Electromagnetic Research, PIER*, vol. 102, pp. 267-286, 2010.
- [J59] G. Antonini, “**A General Framework for the Analysis of Metamaterial Transmission lines**”, *Progress in Electromagnetics Research B, PIER B*, vol. 20, pp. 353-373, 2010.
- [J60] G. Antonini, F. Ferranti, T. Dhaene, L. Knockaert, “**Parametric Macromodeling of Lossy and Dispersive Multiconductor Transmission Lines**”, *IEEE Transactions on Advanced Packaging*, Vol. 33, n. 2, pp. 481 – 491, Maggio 2010.
- [J61] G. Antonini, L. De Camillis, V. Jandhyala, “**Power-bus sensitivity analysis**”, *IEEE Transactions on Advanced Packaging*, Vol. 33, n. 2, pp. 447 – 456, Maggio 2010.
- [J62] G. Antonini, A. Orlandi, L. Raimondo, “**Advanced Models for Signal Integrity and Electromagnetic Compatibility-Oriented Analysis of Nano-Interconnects**”, *IEEE Trans. on Electromagnetic Compatibility*, Vol. 52, n. 2, pp.447-454, 2010.
- [J63] R. Ferrauto, F. De Paulis, E. Ippoliti, F. Vasarelli, U. Di Marcantonio, A. Orlandi and G. Antonini, “**Electromagnetic Analysis of a Supply Chain for Satellite Applications: 3D Modeling and Validation**”, *IEEE Transactions on Electromagnetic Compatibility*, Vol. 52, n. 3, pp. 629 – 639, 2010.
- [J64] G. Antonini, “**Spectral Models for the Estimation of Delay and Crosstalk in High-Speed Interconnects**”, *IEEE Transactions on Electromagnetic Compatibility*, Vol. 52, n. 3, pp. 728 - 736, 2010.

- [J65] G. Antonini, F. Ferranti, T. Dhaene, L. Knockaert, D. De Zutter, "**Parametric Macromodeling for Tabulated Data Based on Internal Passivity**", *IEEE Microwave and Components Letters*, vol. 20, n. 10, pp. 533 – 535, 2010.
- [J66] F. Ferranti, G. Antonini, T. Dhaene, L. Knockaert, "**Guaranteed Passive Parameterized Model Order Reduction of the Partial Element Equivalent Circuit (PEEC) Method**", *IEEE Transactions on Electromagnetic Compatibility*, vol. 52, n. 4, pp. 974 - 984, 2010.
- [J67] G. Antonini, F. Ferranti, T. Dhaene, L. Knockaert, "**Passivity-Preserving Parametric Macromodeling for Highly Dynamic Tabulated Data Based on Lur'e Equations**", *IEEE Microwave Theory and Techniques.*, vol. 58, n. 12, parte 1, pp. 3688 - 3696, 2010.
- [J68] G. Antonini, A. E. Ruehli, "**Waveform Relaxation Time Domain Solver for Subsystem Arrays**", *IEEE Trans. on Advanced Packaging* (Special Issue on Recent Progress in Electrical Modeling and Simulation of High-Speed Integrated Circuits and Packages), vol. 33, n. 4, pp. 760 – 768, 2010. **Invited Paper.**
- [J69] F. Ferranti, G. Antonini, T. Dhaene, L. Knockaert, "**Passivity-preserving Interpolation-based Parameterized Model Order Reduction of the Partial Element Equivalent Circuit (PEEC) Method Based on Scattered Grids**", *International Journal of Numerical Modelling: Electronic Networks, Devices and Fields*, vol. 24, n. 5, pp. 478-495, December 2011.
- [J70] G. Antonini, F. Ferranti, T. Dhaene, L. Knockaert, "**Physics-based Passivity-Preserving Parameterized Model Order Reduction for PEEC based Analysis**", *IEEE Trans. on Components, Packaging and Manufacturing Technology*, vol. 1, n.3, pp. 399 – 409, 2011.
- [J71] F. Ferranti, M. Nakhla, G. Antonini, T. Dhaene, L. Knockaert and A. E. Ruehli, "**Multipoint Full-Wave Model Order Reduction for Delayed PEEC Models with Large Delays**", *IEEE Trans. on Electromagnetic Compatibility*, vol. 53, n. 3, pp. 243 - 248, 2011.
- [J72] G. Antonini, F. Ferranti, T. Dhaene, L. Knockaert and A. Orlandi, "**Compact and Accurate Models of Single-Wall-Carbon-Nanotube Interconnects**", *IEEE Transactions on Electromagnetic Compatibility*, vol. 53, n. 3, pp. 1025 - 1033, 2011.
- [J73] F. Ferranti, T. Dhaene, L. Knockaert, G. Antonini and A. Ciccomancini Scogna, "**Scalable Compact Models for Fast Design Optimization of Complex Electromagnetic Systems**", *International Journal RF-CAD*, vol. 22, n. 1, pp. 20 - 29, 2012.
- [J74] L. De Camillis, F. Ferranti, G. Antonini, D. Vande Ginste, D. De Zutter, "**A Parameterized Partial Element Equivalent Circuit Method for Sensitivity Analysis of Multiport Systems**", *IEEE Trans. on Components, Packaging and Manufacturing Technology*, Vol. 2, no. 2, pp. 248 – 255, Febbraio 2012.
- [J75] F. Ferranti, T. Dhaene, L. Knockaert, G. Antonini, "**Parametric Macromodeling Based on Amplitude and Frequency Scaled Systems with Guaranteed Passivity**", *Wiley International Journal of Numerical Modelling: Electronic Networks, Devices and Fields*, Vol. 25, no. 2, pp. 139–151, March/April 2012.
- [J76] F. Ferranti, M. Nakhla, G. Antonini, T. Dhaene, L. Knockaert and A. Ruehli, "**Interpolation-based Parameterized Model Order Reduction of Delayed Systems**", *IEEE Trans. on Microwave Theory and Techniques*, Vol. 60, no. 3, pp. 431-440, March 2012.
- [J77] G. Antonini, "**Spectral Models of Lossy and Dispersive Non-Uniform Transmission Lines**", *IEEE Transactions on Electromagnetic Compatibility*, Vol. 54, no. 2, pp. 474-481, April 2012.

- [J78] D. Spina, F. Ferranti, T. Dhaene, L. Knockaert, G. Antonini, “**Variability Analysis of Multiport Systems via Polynomial Chaos Expansion**”, *IEEE Trans. on Microwave Theory and Techniques*, Vol. 60, no.8, pp. 2329 – 2338, 2012.
- [J79] D. Spina, F. Ferranti, G. Antonini, T. Dhaene and L. Knockaert, “**Time-Domain Green’s Function-Based Parametric Sensitivity Analysis of Multiconductor Transmission Lines**”, *IEEE Trans. on Components, Packaging and Manufacturing Technology*, Vol. 2, no. 9, pp. 1510 – 1517, 2012.
- [J80] F. Ferranti, T. Dhaene, L. Knockaert, G. Antonini, “**Parametric Macromodeling for S-parameter Data Based on Internal Nonexpansivity**”, *Wiley International Journal of Numerical Modelling: Electronic Networks, Devices and Fields*, Vol. 26, no. 1, pp. 15-27, Gennaio/Febbraio 2013.
- [J81] A. Ruehli, G. Antonini and L. Jiang, “**Skin-effect Models for Time and Frequency Domain PEEC Solver**”, *Proceedings of the IEEE*, Vol. 101, no. 2, pp. 451 – 472. Invited Paper..
- [J82] C. Holloway, E. Kuester, A. E. Ruehli, G. Antonini, “**Partial and Internal Inductance: Two of Clayton R. Paul’s Many Passions**”, *IEEE Transactions on Electromagnetic Compatibility*, Vol. 55, n. 4, pp. 600 - 613, 2013.
- [J83] G. Antonini, A. Orlandi, S. Pignari, “**Review of Clayton R. Paul Studies on Multiconductor Transmission Lines**”, *IEEE Transactions on Electromagnetic Compatibility*, Vol. 55, n. 4, pp. 639 - 647, 2013.
- [J84] G. Antonini, D. Romano, “**Efficient Frequency-Domain Analysis of PEEC Circuits Through Multiscale Compressed Decomposition**”, *IEEE Transactions on Electromagnetic Compatibility*, Vol. 56, n. 2, pp. 454-465, 2014.
- [J85] G. Antonini, D. Romano, “**An Accurate Interpolation Strategy for Fast Frequency Sweep of Partial Element Equivalent Circuit Models**”, *IEEE Transactions on Electromagnetic Compatibility*, Vol. 56, n. 3, pp. 653 - 658, 2014.
- [J86] G. Antonini, D. Romano, “**Acceleration of Nodal-Time-Domain Analysis of PEEC Circuits Through Multiscale Compressed Decomposition**”, *IEEE Transactions on Electromagnetic Compatibility*, Vol. 56, n. 4, pp. 970-979, 2014.
- [J87] D. Spina, F. Ferranti, G. Antonini, T. Dhaene, L. Knockaert, “**Efficient Variability Analysis of Electromagnetic Systems via Polynomial Chaos and Model Order Reduction**”, *IEEE Transactions on Components, Packaging and Manufacturing Technology*, Vol. 4, n. 6, pp. 1038 - 1051, 2014.
- [J88] G. Antonini, D. Romano, “**Partitioned Model Order Reduction of Partial Element Equivalent Circuit Models**”, *IEEE Transactions on Components, Packaging and Manufacturing*, Vol. 4, n. 9, pp. 1503 - 1514, 2014.
- [J89] D. Romano, G. Antonini, D. Daroui, J. Ekman, “**A Fast Sparse Reluctance and Capacitance-Based Solver for the Partial Element Equivalent Circuit Method**”, *IEEE Transactions on Electromagnetic Compatibility*, Vol. 56, n. 5, pp. 1077- 1086, 2014.
- [J90] F. Ferranti, G. Antonini, T. Dhaene, L. Knockaert, “**Parametric Models for Efficient Design of Nanotube Interconnects**”, *IEEE Transactions on Electromagnetic Compatibility*, Vol. 56, n. 6, pp. 1674 - 1681, 2014.

- [J91] V. Tamburrelli, F. Ferranti and G. Antonini, "A Rational Macromodel for the Cardiovascular Tree", *International Journal for Numerical Methods in Biomedical Engineering*, vol. 31, no. 3, pp. 1-17, 2015.
- [J92] G. De Luca, G. Antonini, P. Benner, "Parallelization of Multi-Point Model Order Reduction Algorithm of PEEC Models", *ACES Journal*, vol. 30, no. 1, pp. 1-21, 2015.
- [J93] D. Spina, F. Ferranti, T. Dhaene, L. Knockaert, G. Antonini, "Polynomial Chaos-Based Macromodeling of Multiport Systems Using an Input-Output Approach", *Wiley International Journal of Numerical Modelling: Electronic Networks, Devices and Fields*, vol. 28, n. 4, pp. 562–581, September/October 2015.
- [J94] G. Antonini, D. Romano, "Quasi-Static Partial Element Equivalent Circuit Models of Linear Magnetic Materials", *IEEE Transactions on Magnetics*, vol. 51, no. 7, 2015.
- [J95] G. Antonini, D. Romano, "Adaptive-Cross-Approximation Based Acceleration of Transient Analysis of Partial Element Equivalent Circuits", *IET Antennas, Microwaves and Devices*, vol. 9, no. 7, pages 700-709, 2015.
- [J96] G. Antonini, D. Romano, "A Vector Multiscale Compressed Decomposition based Solver for PEEC Method", *Wiley International Journal of Numerical Modelling: Electronic Networks, Devices and Fields*, vol. 28, n.4, July/August, pp 419-432, 2015.
- [J97] G. Antonini, D. Romano, M. Bandinelli, A. Mori, A. Dieudonne Goleanu, M. Dunand, "A Surface PEEC Formulation for High-Fidelity Analysis of the Current Return Networks in Composite Aircrafts", *IEEE Transactions on Electromagnetic Compatibility*, vol. 57, no. 5, pages 1027-1036, 2015
- [J98] M. De Lauretis, G. Antonini, J. Ekman, "Delay-Rational Model of Multiconductor Transmission Lines with Frequency Independent Per-Unit-Length Parameters", *IEEE Transactions on Electromagnetic Compatibility*, vol. 57, no. 5, pages 1235-1245, 2015.
- [J99] D. Romano, G. Antonini, "Partial Element Equivalent Circuit-Based Transient Analysis of Graphene-Based Interconnects", *IEEE Transactions on Electromagnetic Compatibility*, vol. 58, no. 1, pages 801- 810, 2016.
- [J100] F. Ferranti, A. De Marcellis, M. Janneh, E. Palange, G. Antonini, "A metamodeling technique for the efficient design optimization of metasurfaces", *Electronics Letters*, Vol. 52, no. 14, pages 1191-1192, 2016.
- [J101] D. Romano, G. Antonini, "Augmented Time Domain PEEC Solver for Dispersive Magnetic Materials Modeling", *IEEE Trans. on Magnetics*, Vol. 52, no. 5, 2016.
- [J102] M. De Lauretis, G. Antonini, J. Ekman, "A SPICE Realization of the Delay-Rational Green's Function Based Method for Multiconductor Transmission Lines", *IEEE Trans. on Electromagnetic Compatibility*, Vol. 58, no. 4, pages 1158-1168, 2016.
- [J103] D. Romano, G. Antonini, A. E. Ruehli, "Time Domain PEEC Solver Including Non-Linear Magnetic Materials", *IEEE Trans. on Magnetics*, Vol. 52, no. 9, 2016.
- [J104] A. Astorino, G. Antonini, M. Swaminathan, "A New Approach for Magneto-Static Hysteresis Behavioral Modeling", *IEEE Trans. on Magnetics*, Vol. 52, no. 9, 2016.
- [J105] L. De Camillis, F. Ferranti, G. Antonini, "Parameterized Model Order Reduction for Efficient Time and Frequency Domain Global Sensitivity Analysis of PEEC Circuits", *ACES Journal*, vol. 31, no. 10, pp. 1170-1180, 2016.

- [J106] D. Romano, G. Antonini, M. D'Emidio, D. Frigioni, A. Mori, M. Bandinelli, "**Rigorous DC Solution of Partial Element Equivalent Circuit Models**", *IEEE Trans. on CAS-I*, Vol. 63, no. 9, pp. 1499- 1510, 2016.
- [J107] L. Lombardi, P. Belforte, G. Antonini, "**Digital Wave Simulation of Quasi-Static Partial Element Equivalent Circuit Method**", *IEEE Trans. on EMC*, Vol. 59, no. 2, pages 429-438, 2017.
- [J108] D. Spina, T. Dhaene, L. Knockaert, G. Antonini, "**Passive Polynomial Chaos-Based Macromodeling of Multiport Systems**", *IEEE Trans. on MTT*, Vol. 65, no. 5, pages 1422-1433, 2017.
- [J109] C. Gianfagna, M. Swaminathan, P. M. Ray, R. Tummala and G. Antonini, "**A Machine Learning Approach to Design Nano-Magnetic-Based Antennas**", *Springer JEMS*. Vol. 46, no. 8, pp 4963–4975, Agosto 2017.
- [J110] D. Romano, G. Antonini, "**Partial Element Equivalent Circuit Model of Magneto-Dielectric Materials** ", *IET-Microwaves, Antennas and Propagation*, Vol. 11, no. 6, pages 915 – 922, 2017.
- [J111] L. Lombardi, R. Raimondo, G. Antonini, "**Electrothermal Formulation of the PEEC Method**", *Wiley International Journal of Numerical Modelling: Electronic Networks, Devices and Fields*, published on-line May 9, 2017.
- [J112] M. Parise, G. Antonini, "**On the Radiation from a Short Current-Carrying Straight Wire Oriented Perpendicular to a Stratified Medium**", *Progress in Electromagnetic Research, PIER*, Vol. 159, pages 49-57, 2017.
- [J113] M. Parise, M. Muzi, G. Antonini, "**Loop antennas with uniform current in close proximity to the Earth: Canonical solution to the surface-to-surface propagation problem**", *Progress in Electromagnetic Research B*, Vol. 77, pages 57-69, 2017.
- [J114] L. Lombardi, D. Romano, G. Antonini, "**Accurate and Efficient Low-Frequency Solution of Partial Element Equivalent Circuit Models**", *IEEE Trans. on EMC*, Vol. 59, no. 5, pages 1514 – 1522, Ottobre 2017.
- [J115] L. Lombardi, D. Romano, G. Antonini, "**Partial Element Equivalent Circuit Modeling of Silicon Interconnects**", *IEEE Trans. on Microwave Theory and Techniques.*, Vol. 65, no. 12, pp. 4794-4801, 2017. DOI 10.1109/TMTT.2017.2727487.
- [AJ116] A. Hartman, D. Romano, G. Antonini, J. Ekman, "**Partial Element Equivalent Circuit Models of Three-dimensional Geometries Including Anisotropic Dielectrics** ", accettato per la pubblicazione su *IEEE Trans. on EMC*.
- [AJ117] D. Romano, L. Lombardi, G. Antonini, "**Acceleration of the Partial Element Equivalent Circuit Method with Uniform Tessellation-Part I: Identification of Geometrical Signatures**", accettato per la pubblicazione su *Wiley International Journal of Numerical Modelling: Electronic Networks, Devices and Fields*.
- [AJ118] D. Romano, L. Lombardi, G. Antonini, "**Acceleration of the Partial Element Equivalent Circuit Method with Uniform Tessellation-Part II: Efficient Frequency Domain Solver with Interpolation and Reuse of Partial Elements**", accettato per la pubblicazione su *Wiley International Journal of Numerical Modelling: Electronic Networks, Devices and Fields*.

- [AJ119] E. Biello, G. Antonini, M. De Lauretis, J. Ekman, "**Electromagnetic Interference on Multiconductor Transmission Lines through Delayed Rational Models**", accettato con Major Revisions per la pubblicazione su *Wiley International Journal of Numerical Modelling: Electronic Networks, Devices and Fields*.
- [AJ120] L. Lombardi, G. Antonini, A. Ruehli, "**Enhanced Computation of Partial Elements Couplings using Green's Function Taylor Expansion**", accettato con Major Revisions per la pubblicazione su *IEEE Trans. on MTT*.
- [AJ121] M. Parise, G. Antonini, "**Mutual inductance of two thin-wire co-planar circular loops**", accettato per la pubblicazione su *IEEE Trans. On EMC*.
- [AJ122] L. Lombardi, M. De Lauretis, G. Antonini, J. Ekman, "**On the Distortionless Propagation on Multiconductor Transmission Lines**", accettato per la pubblicazione su *IEEE Trans. on CMPT*, sezione EDAPS 2016.
- [AJ123] F. Ferranti, M. D. Astorino, N. Tedeschi, G. Antonini, F. Frezza, "**Efficient Design of Metamaterial Absorbers using Parametric Macromodels**", accettato per la pubblicazione su *ACES Journal*.
- [AJ124] R. Razzaghi, M. Scatena, K. Sheshyekani, M. Paolone, F. Rachidi, G. Antonini, "**Locating Lightning Strikes and Flashovers using Electromagnetic Time Reversal**", accettato per la pubblicazione su *EPSR*.
- [AJ125] M. Parise, V. P. Tamburrelli, G. Antonini, "**Mutual impedance of thin-wire circular loops in near-surface applications**", accettato per la pubblicazione su *IEEE Trans. on EMC*.
- [AJ126] A. Astorino, D. Romano, G. Antonini, "**Fast and Versatile Inverse Hysteresis Model in Quasi-Static Regime: derivation and implementation in Simulink and PEEC frameworks**", accettato per la pubblicazione su *IEEE Trans. on Magnetics*.