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(Massimo De Marco, Luca Volpe, Giancarlo Gatti, Mate Liszi, Istvan Drotar, Christos Kamperidis, Kwinten Nelissen)

807 **EMC versus Safety in Physics Research**
(Friedrich Szoncso, Daniel Valuch)

Numerical Simulation Techniques for EMC Problems (I)

812 **S-EHRFEM — Substrate Extraction Using Highly Reduced FEM-Meshes for Transient SPICE-Simulation with Iterative Linear Solvers**
(Alexander Schade, Frank Klotz, Stefan Jahn, Robert Weigel)

820 **Transport of Power Through Networks of Cables Using Quantum Graph Theory**
(Mubarack Ahmed, Gabriele Gradoni, Stephen Creagh, Chris Smartt, Steve Greedy, Gregor Tanner)

825 **Stabilized Explicit Isogeometric Analysis (SE-IGA) for Efficient Modeling and Analysis of 2-D Curved Structures**
(Hayato Naojima, Tadatoshi Sekine)

831 **Analysis of Induced Currents and Voltages During an Air-to-Air Refueling Operation Due to On-Board High Frequency Radio Transmissions Using Advanced Simulations in Time Domain**
(Enrique Pascual Gil, David Garcia Gomez)

837 **Low Frequency Extrapolation for the FDTD Method**
(Camille Bastard, Marc Meyer, Christophe Guiffaut, Alain Reineix)

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842 **Simultaneous EMI Suppression of the Input and Output Terminals of a DC/DC Converter by Injecting Multiple Synthesized Cancellation Signals**
(Andreas Bendicks, Marvin Rübartsch, Stephan Frei)

848 **Noise Reduction in Periodically Switching MOSFET Circuits Using Iteratively Found Synthesized Control Signals**
(Tobias Dörlemann, Andreas Bendicks, Caroline Krause, Stephan Frei)

854 **Ground Bridge Effect on Reduction of Conducted Emission from Three-Phase Motor Drive System**
(Yuandong Guo, Srinath Penugonda, Minho Kim, Junesang Lee, Jungrae Ha, Sangwon Yun, Jun Fan, Hongseok Kim)

860 **Uncertainty of CAN RF Emission Test Results Due to Common Mode Choke Asymmetry**
(Sergey Miropolsky, Marlon Roebl, Frank Klotz)

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866 **Evaluation of Near-Field Undesired Radio Waves from Semiconductor Switching Circuits**
(Makoto Nagata, Koh Watanabe, Yoshifumi Sugimoto, Noriyuki Miura, Satoshi Tanaka, Yasunori Miyazawa, Masahiro Yamaguchi)

870 **Using the Embedded Ceramic Dielectric Cylinders to Improve the Signal Integrity of Via Transition**
(Yusheng Hu, Tongyu Ding, Qiubo Ye)

875 **Chip-Level ESD Verification Using Graph-Theory Based Approach**
(Vlatko Galić, Aarnout Wieers, Renaud Gillon, Adrijan Barić)

881 **Miniature Common-Mode Rejection Filter in Silicon-Based Integrated Passive Device Technology**
(Chung-Hsien Chan, Yo-Shen Lin)

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885 **Applications with a Rydberg Atom-Based Radio Frequency Antenna/Receiver**
(Matthew T. Simons, Abdulaziz H. Haddab, Joshua A. Gordon, Christopher L. Holloway)

890 **Evaluation of Electromagnetic Noise Radiated from Tube-Type LED Lamps and its Effect on Wireless Medical Telemetry Systems**
(Kai Ishida, Sazu Arie, Ifong Wu, Kaoru Gotoh, Yasushi Matsumoto)

896 **Artificial Intelligence for Automatic Classification of Unintentional Electromagnetic Interference in Air Traffic Control Communications**
(Patrik Eliardsson, Peter Stenumgaard)

902 **A Novel Intelligent Antenna Synthesis System Using Hybrid Machine Learning Algorithms**
(Mengtao Xue, Dan Shi, Yeyang He, Chaoying Li)

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908 **Probabilistic Model of the Effect of a Ground Discontinuity on the Transmission of a Microstrip Interconnect**
(R. Trinchero, Flavio G. Canavero)

912 **HPC Simulations of a Reverberation Chamber with Nonparallel Walls**
(Luca Bastianelli, Franco Moglie, Valter Mariani Primiani, Gabriele Gradoni)

917 **Application of Stochastic FDTD to Thin-Wire Analysis**
(Miguel Ruiz Cabello, Luis Diaz Angulo, Amelia Rubio Bretones, Mario Fernandez Pantoja, Salvador Gonzalez Garcia)

921 **Comparison of Predictions Between Artificial Neural Networks and Gaussian Processes in EMC Investigations**
(Felix Burghardt, Heyno Garbe)

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927 **Analysis of Availability and Safety Considerations in EM-Diverse Systems**
(Jonas Lannoo, Jonas Van Waes, Dries Vanoost, Jeroen Boydens, Davy Pissoort)

933 **Topology-Optimization-Based EMC Design**
(Katsuya Nomura, Atsuhiro Takahashi, Takashi Kojima, Shintaro Yamasaki, Kentaro Yaji, Hiroki Bo, Kikuo Fujita)

938 **Comparison of Voltages Induced in an Electronic Equipment During Far Field and Near Field Normative Radiated Immunity Tests**
(André Durier, Sonia Ben Dhia, Tristan Dubois)

944 **Design of Vialess Open-Stub EBG Structure by Using Preference Set-Based Design Method**
(Yoshitaka Toyota, Sho Kanao, Kengo Iokibe)

948 **Study of Feasibility of Building Materials Electromagnetic Characterization**
(Jérémie Corsi, Frédéric Puybaret, Stéphane Vauchamp, Isabelle Lachaud, Philippe Viars)

953 **Phase Measurement Techniques for Detecting the Defective Elements of an Array Antenna at 28GHz**
(Kyungho Yoo, Tongho Chung, Namkyoung Kim, Byongsu Seol, Young-pyo Hong, Dong-joon Lee)

957 **EMC "Black Box" Model for Unbalanced Power Electronic Converters**
(Amina Gahfif, Pierre Étienne Levy, Marwan Ali, Mounira Berkani, François Costa)

963 **Coupled Inductors and Their Applications**
(Heinz Zenkner)

968 **Radiation of Low Frequency Magnetic Field from High Voltage Powertrain Systems of Electric Vehicles**
(George Chiqovani, Irina Oganezova, Giga Gabriadze, Michael Kühn, Marcel Messer, Roman Jobava)

972 **Interlaboratory Comparison of Radiated Immunity in Automotive EMC**
(Andrei-Marius Silaghi, Relu-Adrian Aipu, Aldo De Sabata, Catalin-Iulian Balan, Petre-Marian Nicolae)

976 **Effects of Fabrication Processes in Power Cable Electrical Parameters**
(A.A. Moyses, M. Iglesias, F. Arteche, F.J. Arcega)

EMC Tents for Precompliance Testing and Reverberating Chambers
(Alessandro Soliani Brivio, Ivano Soliani)

Protection of a Buried Telecommunication Cable Against Lightning Using Follow-On Earth Wire
(Sabrina Mezoued, Abdelmalek Laissaoui, Bachir Nekhoul, Kamal Kerroum, Khalil El Khamlichi Drissi)

992 **Study on Grounding Ways of Secondary Cable in UHVDC Converter Substation**
(Lei Yan, Weidong Zhang, Jianfei Ji, Zhaohua Zhang, Weidong Shi)

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997 **Reference Setup for RF Impedance Measurements with High DC Bias Currents**
(Oliver Kerfin, Martin Harm, Benjamin Willmann)

1003 **An Active Common Mode EMI Filter Approach Introducing Predictive Pulsed Compensation**
(Denis Müller, Desirée Nadine Schweitzer, Michael Beltle, Stefan Tenbohlen)

1009 **Modeling of Conducted EMI Noise in an Automotive LED Driver Module with DC/DC Converters**
(Chiuk Song, Hucksu Kweon, Unho Lee, Jonghyun Kim, Sieun Yang, Jonghyun Park)

1014 **Analysis of Immunity Failures and Optimization Measures in Automotive Sensors**
(Jan Benz, Andreas Klaedtke, Jan Hansen, Stephan Frei)

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1020 **Permissible SA and Radiant Exposure for Brief Exposure in GHz Region**
(Sachiko Kodera, Akimasa Hirata)

1025 **Assessing the Electric Field Strength in the Vicinity of Devices Emitting Signals in the IEEE 802.11ac Standard of Communication**
(Andrei Cristian Bechet, Robert Helbet, Simona Miclaus, Iulian Bouleanu, Annamaria Sarbu, Paul Bechet)

1030 **Radiofrequency Electromagnetic Exposures During the Use of Wireless Links of Portable Computers Inside Trains Without Internal WiFi Services**
(Krzysztof Gryz, Jolanta Karpowicz)

1034 **New Approach for Human Exposure Assessment Along a Rail Corridor**
(Oussama Alilou, François Grange, Nabil Abdelli, Sébastien Journet, José Ribeiro, Attibaud Kouassi, Cyril Maniscalco, Alexandre Machet)

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1039 **Comparison Between Impulsive Noise Models Considering a Time Structure of LED Noise**
(Kenta Agari, Kaoru Gotoh, Yasushi Matsumoto, Ryosuke Suga, Osamu Hashimoto)

1044 **Interference Impact from Solar-Panel Systems on Air Traffic Control Communications**
(Peter Stenumgaard, Sara Linder)

1049 **On the Impact of CW Interference on 5G NR**
(Karina Fors, Erik Axell, Sara Linder, Peter Stenumgaard)

1055 **Improved Electromagnetic Compatibility Standards for the Interconnected Wireless World**
(Marc Pous, Marco A. Azpúrua, Ferran Silva)

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1061 **Shielding Effectiveness Assessment of a Coaxial Cable Design with a Combination of Numerical and Analytical Solutions**
(Clement Pornin, Tan Phu Vuong, Pascal Xavier, Gilbert Angenieux)

1066 **Electromagnetic Pulse Propagation Over Large Area Simulation Through Massively Parallel Adaptive Mesh Refinement FDTD**
(Hanyu Li, Xianfeng Bao, Haijing Zhou)

1071 **Recent Advances to the Feko Integrated Cable Harness Modeling Tool**
(Marlize Schoeman, Elia A. Attardo, Jordi Soler Castany)

A Simplified Modeling of Transient Electromagnetic Coupling in Air Insulation Substation
(B. Khelifi, Bachir Nekhoul, Kamal Kerroum)

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1082 **Experimental Validation of Electromagnetic Models for a Simple Multi-Cell , Multi-Module Battery**
(Yu Xian Teo, Jiaqi Chen, Alastair R. Ruddle)

1088 **Simulation and Measurement of Narrowband Susceptibilities of Digital Automotive Sensors**
(Jan Benz, Jan Hansen, Stephan Frei)

1094 **Experimental Study of the Effect of High DC Bias Currents on the Measurement Performance of Impedance and Current Probes**
(Martin Harm, Oliver Kerfin)

1100 **Investigation of Possible EMC Interferences Between Multi-Gig Communication Link and RF Applications in Vehicle**
(Sanaz Mortazavi, Detlef Schleicher, Diana Eremyan, Anna Gheonjian, Roman Jobava, Ali Sinai, Friedel Gerfers)

1106 **Vehicle Electromagnetic Emissions: Challenges and Considerations**
(Konstantinos Pliakostathis, Marco Zanni, Germana Trentadue, Harald Scholz)

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1112 **Study of Body Position Dependence on Human Exposure in the 2.4GHz Band**
(Silvia de Miguel-Bilbao, Juan Blas, Jolanta Karpowicz, Victoria Ramos)

1116 **Wireless Charging of Electric Vehicles: Planar Secondary Coil Position vs. Magnetic Field**
(T. Campi, S. Cruciani, F. Maradei, Mauro Feliziani)

1122 **The Height Scan Method Accuracy in Rural and Suburban Areas**
(Georgij Leontjev)

1128 **A Radiation-Based Drive-Level ESD Test Method in Solid-State Drives**
(Jungho Jin, Byungjin Kwon, Jaeyoung Heo, Choongpyo Jeon, Jungki Kim, Kangyong Cho)

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1132 **IEMI Resilience Assessment of Critical Infrastructures**
(Thorsten Pusch, Marian Lanzrath, Michael Suhrke)

1138 **LTE Physical Layer Vulnerability Test to Different Types of Jamming Signals**
(Grecia Romero, Virginie Deniau, Olivier Stienne)

1144 **Electromagnetic Watermarking: Exploiting IEMI Effects for Forensic Tracking of UAVs**
(José Lopes Esteves)

1150 **Validation of Electromagnetic Model for an Aircraft Under HIRF Condition with the Non-Intrusive Polynomial Chaos Methods**
(Yueqian Wu, Haijing Zhou, Hanyu Li, Xianfeng Bao, Longquan Zhong)

Education on EMC

On the Limits to Measure Small Leakage Currents with Current Clamps
(Avinash V. Nayak, Chiel Ton, Alexander P.J. van Deursen)

1159 **Experiment to Educate ESD Phenomena to Engineers**
(Frits Buesink, Robert Vogt-Ardatjew, Frank Leferink)

1165 **Co-Design and Co-Analysis for Noise Optimization of Switching Mode Power Supply Circuit Board**
(Narimasa Takahashi, Masato Shobayashi, Masato Higashi, Eriko Yamato, Robert Carter, Yoshi Fukawa)