



**2011 SBMO/IEEE MTT-S  
International Microwave  
and Optoelectronics  
Conference**



**TECHNICAL PROGRAM**

**Imirá Plaza Hotel  
Natal, Brazil**

**October 29 - November 01, 2011**

**2011 SBMO/IEEE MTT-S International  
Microwave and Optoelectronics Conference  
Oct. 29 – Nov. 01, 2011**

**Technical Program**

**Sunday, October 30, 2011**

**8:00AM - 10:00AM Opening Session**

**Opening Ceremony**

**Invited Talk**

**Analysis and Compensation of Phase Variations in Variable Gain Amplifiers for Adaptive Antenna Beamforming Systems**

Frank Ellinger, *Dresden University of Technology, Germany*

**10:20AM – 12:20AM Plenary Session 1 Room: Ponta Negra**

**A Vision for the Future of Technology: the IEEE Technology Time Machine**

José Roberto Boisson de Marca, *PUC/Rio, Brazil*

**2:00PM - 3:40PM Technical Session Su-1 Room: Buzios**

**RFID Antennas**

Chair: Alfredo Gomes Neto, *IFPB, Brazil*

**Trends in the design of RFID tags**

Etienne Perret, *Grenoble-inp/LCIS, France, Brazil*, Prof. Smail Tedjini, *Grenoble-inp/LCIS, Dr. Glauco Fongalland, Federal university of Campina Grande, Brazil*

**WCIP - A Technique for the Analysis of RFID Tag Antennas**

Adaildo Dassuncao Junior, *(Federal Institute of Education, Science and Technology of Paraíba, IFPB), Brazil*

Alfredo Gomes Neto, *Federal Institute of Education, Science and Technology of Paraíba, IFPB, Brazil*

Patric Lacouth, *Universidade Federal de Campina Grande, Brazil*

G. Fontgland, *Federal university of Campina Grande, Brazil*

Henri Baudrand, *Laboratoire de Microondes et dElectromagnétisme, LAME , ENSEEIHT, France.*

**Design of an UHF Quasi-Yagi Antenna with Metamaterial Structures for RFID Application**

Humberto de Araújo, *University of Campinas, Brazil*

Silvio Barbin, *Universidade de São Paulo, Brazil*

Luiz Carlos Kretly, *University of Campinas, Brazil.*

**Numerical Characterization of RFID tags using WCIP**

Augusto Montalvão, Emanuele Montalvão, Adaildo D'Assunção, Laércio Mendonça, *Universidade Federal do Rio Grande do Norte, Brazil*

Alfredo Gomes Neto, *Federal Institute of Education, Science and Technology of Paraíba, IFPB, Brazil.*

**A Comparison of Minkowski and Koch Fractal Patch Antennas**

Leonardo Bastos Moraes, *University of São Paulo, Brazil*

Silvio Barbin, *Universidade de São Paulo, Brazil.*

**2:00PM - 3:40PM Technical Session Su-2 Room: Pipa**

**Optical Systems, Networks and Related Topics I**

Chair: Murilo A. Romero, *Universidade de São Paulo, Brazil*

**Measurement of high time-bandwidth pulses on a chip with a phase sensitive optical oscilloscope**

Alessia Pasquazi, *INRS Énergie, Matériaux et Télécommunications, Canada*

Marco Peccianti, *INRS Énergie, Matériaux et Télécommunications, Canada*

Brent E. Little, *Infinera Ltd, USA*

Sai T. Chu, *Infinera Ltd, USA*

Roberto Morandotti, *INRS Énergie, Matériaux et Télécommunications, Canada*

Jose Azana, *INRS Énergie, Matériaux et Télécommunications, Canada*

David J. Moss, *University of Sydney, Australia*

**112 Gb/s DP-QPSK Optical Transmission Over 3000 km Using Offline Digital Signal Processing**

Eduardo Rosa, *University of Campinas, Brazil*

Vitor Ribeiro, Julio Diniz, Reginaldo Silva, Flávio Silva, Adolfo Herbster, Julio Oliveira, *CPqD, Brazil.*

**Optical Frequency Comb Generator for Coherent WDM System in Tb/s Applications**

Daniel Pataca, *CPqD, Brazil*

Fabio Simoes, *CPqD Telecom & IT Solutions, Brazil*

Monica Rocha, *Universidade de São Paulo, Brazil.*

**80 km Extended Gigabit Passive Optical Network**

Getulio Paiva, *Research and Development Center in Telecommunications, Brazil*

Maurilio Freire, *CPqD, Brazil*

Ulysses Duarte, *Research and Development Center in Telecommunications, Brazil*

André Sassi, *Fundação CPqD, Brazil*

Antonio Bizzeti, *Research and Development Center in Telecommunications, Brazil*

Joao Pozzuto, *CPqD, Brazil*

Joao Rosolem, *CPqD Research and Development Center in Telecommunications, Brazil*

Murilo A Romero, *Universidade de Sao Paulo, Brazil.*

**Passive Optical Network Upgrading by Using In-Band WDM Overlay**

Rivael Penze, *CPqD, Brazil*

Joao Rosolem, *CPqD Research and Development Center in Telecommunications, Brazil*

Renato Baldini Filho, *Universidade Estadual de Campinas, Brazil.*

**2:00PM - 3:40PM Technical Session Su-3 Room: Pirangi**

**Propagation and Related Topics I**

Chair: Luiz da Silva Mello, *PUC/Rio, Brazil*

**New Analytic Results for the Incomplete Toronto Function and Incomplete Lipschitz-Hankel Integrals**

Paschalis Sofotasios, *University of Leeds, Great Britain.*

**Throughput of CSMA in a Rice-Signal with Hoyt-Interference Environment**

Elvio Leonardo, *State University of Maringa, Brazil*  
Michel Yacoub, *UNICAMP, Brazil*.

**SFN Channel Measurements in a ISDB-T Broadcast System**

Mauricio Guerra, *Pontificia Universidade Católica do Rio de Janeiro, Brazil*  
Luiz da Silva Mello, *PUC/Rio, Brazil*  
Rodolfo Souza, *Inmetro, Brazil*.

**Hybrid Guided Search Detector for MIMO Systems**

Yuri Mendes Mostagi, *Depto Eng. Elétrica da Univ. Estadual de Londrina, Brazil*  
Taufik Abrão, *State University of Londrina, Brazil*.

**2:00PM - 3:40PM Technical Session Su-4 Room: Ponta Negra**

**Microstrip Filters**

Chair: Silvio Barbin, *Universidade de São Paulo, Brazil*.

**Improving Spurious Rejection of ITASAT Transponder Using Interdigital Microstrip Filter With Quasi-Fractal Koch Curve**

Tiago de Araujo, Antonio Campos, *Universidade Federal do Rio Grande do Norte, Brazil*.

**Design of Low-Pass Microstrip Filters Based on Defected Ground Structure**

Abdalla Junior, Leonardo Menezes, *Universidade de Brasília, Brazil*  
Antonio Martins, *UnB, Brazil*.

**Multiple split-ring resonators for tri-band filter with asymmetric response**

Patricia Castillo Aranibar, *Universidad Católica San Pablo, Peru*  
Alejandro García Lampérez, Daniel Segovia-Vargas, Magdalena Salazar-Palma, *Universidad Carlos III de Madrid, Spain*  
Silvio Barbin, *Universidade de São Paulo, Brazil*.

**Compact C-band Microwave Bandpass Filter based on Microstrip Parallel-coupled Line Structure for Satellite Communication Systems**

Hussein Shaman, *King Abdulaziz City for Science and Technology, Saudi Arabia*.

**Design and Application of Quasi-Elliptic Bandstop Filters**

Tejinder Kaur Kataria, Alonso Corona-Chavez, *National Institute for Astrophysics, Optics and Electronics INAOE, Mexico*  
Ignacio Llamas-Garro, *Centre Tecnològic de Telecomunicacions de Catalunya, Spain*.

**4:20PM - 6:20 PM Poster Session PS-1 Room: Genipabu**

**A WDM-PON Implementation Employing Spectrum-Sliced ASE Source, Dispersion Management and PIN Receivers**

Ulysses Duarte, Getulio Paiva, *Research and Development Center in Telecommunications, Brazil*  
Fernando Pereira, *Research and Development Center in Telecommunications, Brazil*  
Edson Wilson Bezerra, Joao Rosolem, *CPqD Research and Development Center in Telecommunications, Brazil*  
Murilo A Romero, *Universidade de Sao Paulo, Brazil*.

**2.5 Gbit/s Burst Mode Receiver for NG-PON**

Bruno Angeli, *Unicamp / CPqD, Brazil*  
Eduardo Mobilon, *CPqD Telecom & IT Solutions, Brazil*  
Aldário Bordonalli, *UNICAMP - University of Campinas, Brazil*  
Einar in de Betou, *Ericsson, Sweden*.

**Investigation of Noise Sources in Radio-over-Fiber Systems for Wi-Fi Applications**

Daniel Lona, *State University of Campinas - UNICAMP, Brazil*  
Arismar Cerqueira Sodré Junior, *UNICAMP, Brazil*

Raphael Assumpção, Omar Branquinho, *Pontifícia Universidade Católica de Campinas, Brazil*  
Marcelo Abbade, *Pontifícia Universidade Católica de Campinas, Brazil*  
H. E. Hernández-Figueroa, *State University of Campinas, UNICAMP, Brazil*.

### **Coupling Characteristics of Multicore Photonic Crystal fiber Doped with Germanium**

José Patrocínio da Silva, *Universidade Federal Rural do Semiárido, Brazil*  
Marcelo Figueiredo Bellaguarda, *Universidade Federal do Rural do Semiárido, MCC-UFERSA, Brazil*.

### **PMD Emulator Using Non-Uniform Probability Distributed State of Polarization**

Anderson Bravalheri, *University of Campinas, Brazil*  
Adolfo Herbster, *CPqD, Brazil*  
Gustavo Fraidenraich, *Unicamp, Brazil*.

### **Flexible Waveguide Probe for Silicon-Photonics Wafer-Level Testing**

Roberto Panepucci, *Centro de Tecnologia da Informação, Brazil*  
Abdullah Zakariya, *CREOL University of Central Florida, USA*  
Lavanya Kudapa, *Florida International University, USA*.

### **Evaluation of NRZ-DQPSK Signals Amplified by Semiconductor Optical Amplifier**

Peterson Rocha, *University of Campinas, Brazil*  
Cristiano Gallep, *State University of Campinas, Brazil*  
Evandro Conforti, *Unicamp, Brazil*.

### **Fuzzy Inference System for Risk Classification on Polluted Insulator Strings of High Voltage Transmission Lines**

Hilton Lima, Sergio Oliveira, *Universidade de Pernambuco, Brazil*  
Eduardo Fontana, *Universidade Federal de Pernambuco, Brazil*.

### **Improving Dispersion Compensation of Photonic Crystal Fibers Through Air Hole Core Insertion**

Gilliard Malheiros-Silveira, *UNICAMP, Brazil*  
J. A. Mores Jr., *Universidade Estadual de Campinas - Faculdade de Engenharia Elétrica e Computação, Brazil*  
Hugo Figueroa, *Unicamp, Brazil*.

### **A numerical study of the cavity length influence on the bandwidth of an EDFL mode-locked by SWCNT as saturable absorbers**

Paulo Komninos, *Mackenzie University, Brazil*  
Henrique Guimaraes Rosa, *Laboratório de Fotônica, Universidade Presbiteriana Mackenzie, Brazil*  
Eunézio Antônio Souza, *Universidade Presbiteriana Mackenzie, Brazil*.

### **On the use of image segmentation for propagation path loss prediction**

Leandro Fernandes, *Universidade de Brasília, Brazil*  
Antonio Martins, *UnB, Brazil*.

### **Statistical Characterization of a Femtocell Indoor Radio Channel**

João A. Cal Braz, Pedro Vladimir Gonzalez Castellanos, *INMETRO, Brazil*  
Carlos Rodriguez, *Inmetro, Brazil*  
Luis Alberto Ramirez, *Pontifícia Universidade Católica do Rio de Janeiro, Brazil*  
Flávio Hasselmann, *PUC-Rio, Brazil*  
Luiz da Silva Mello, *PUC/Rio, Brazil*  
Leni Matos, *Federal Fluminense University, Brazil*.

### **Power Delay Profile Filtering Techniques for Indoor Radio Channel Characterization**

João A. Cal Braz, Pedro Vladimir Gonzalez Castellanos, *INMETRO, Brazil*  
Rodolfo Souza, Carlos Rodriguez, *Inmetro, Brazil*

Luiz da Silva Mello, *PUC/Rio, Brazil*  
Leni Matos, *Federal Fluminense University, Brazil*  
Edson Cataldo, *Universidade Federal Fluminense, Brazil*.

### **Electric Field Prediction for Medium Waves Radio Broadcasting Using Parabolic Equations**

Alan Teixeira, *Universidade Federal do Pará, Brazil*  
Romulo Oliveira, *IFPA, Brazil*  
João Souza, *Fátima Magno, UFPA, Brazil*  
Gervasio Cavalcante, *Federal University of Para, Brazil*.

### **On the Use of Tamir's Model for Site-Specific Path Loss Prediction of HF/VHF Systems in Forests**

Marinho Alex Kamiroski Melo, José Carlos Araújo dos Santos, Maurício Henrique Costa Dias, *Instituto Militar de Engenharia, Brazil*.

### **Maximum permitted transmit power of white space devices operating on TV spectrum**

Erika Almeida, *Nokia Institute of Technology, Brazil*  
Fabiano Chaves, *Instituto Nokia de Tecnologia - INdT, Brazil*  
Renato Iida, *Nokia Technology Institute, Brazil*  
Edgar Souza, *Instituto Nokia de Tecnologia, Brazil*  
Robson Domingos Vieira, *Nokia Institute of Technology, Brazil*.

### **Simulation and Analysis of the Impulsive Noise Effects in DSL Video Using Ptolemy II**

Fernanda Smith, *UFPA, Universidade Federal do Pará, Brazil*  
Francisco Muller, *Universidade Federal do Para, Brazil*  
Aldebaro Klautau, *Universidade Federal do Para (UFPA), Brazil*  
Evaldo Gonçalves Pelaes, *UFPA/NESC, Brazil*.

### **Chip-level adaptive equalization supervised by a time-multiplexed common pilot sequence in CDMA systems**

Marcelo Augusto Fernandes, *UFRN, Brazil*  
Dalton Arantes, *University of Campinas, Brazil*.

### **Propagation Path Loss in mixed-path environment using narrow angle and wide-angle Parabolic Equations**

Fátima Magno, João Souza, *UFPA, Brazil*  
Klaus Cozzolino, *Universidade Federal do Para, Brazil*  
Jessé Costa, Gervásio P. S. Cavalcante, *UFPA, Brazil*.

### **PLL at 2.4 GHz with reduced reference spurs**

Joao Carmo, *University of Minho, Portugal*  
Jose Correia, *Univ of Minho, Dept Industrial electronics, Portugal*.

### **2.4 GHz Power Amplifier with Asymmetric-LDD MOSFETs**

Szu-Ling Liu, *National Chiao-Tung University, Taiwan*.

### **FR-4 Waveguide Electronic Circuits at 10 Gbit/s**

Vanessa Magri, Marbey M. Mosso, Rodolfo Lima, *PUC-Rio, Brazil*  
Juliano Mologni, *ESSS - Engineering Simulation & Scientific Software, Brazil*.

### **Analog Automatic Gain Control (AGC) CMOS WLAN Direct Conversion Receiver (DCR)**

Augusto Ximenes, Jacobus Swart, *State University of Campinas, Brazil*.

### **Reconfigurable unit cell for EBG and artificial surfaces based on Hairpin resonators**

Eva Rajo-Iglesias, Luis Inclán Sánchez, José Luis Vásquez Roy, *Universidad Carlos III de Madrid, Spain*

Oscar Quevedo-Teruel, *Universidad Autónoma de Madrid, Spain*  
Silvio Barbin, *Universidade de São Paulo, Brazil.*

**A New Procedure for Developing UMTS Filters Based on Periodic Structures**

Saulo Bezerra, Hermano Cabral, *Universidade Federal de Pernambuco, Brazil*  
Marcos de Melo, *universidade Federal de Pernambuco, Brazil.*

**An Ultra Low Cost Bias Tee Unit**

Juliana Carvalho, Marbey M.Mosso, Vanessa Magri, *PUC-Rio, Brazil*  
Gelza Barbosa, *Brazilian Navy, Brazil*  
Jorge Mitriane Souza, *PUC Rio, Brazil*  
Gidy Florez, *CETUC PUC-Rio, Brazil*  
Rogerio Filho, *Puc-rio, Brazil.*

**Practical Design of a Broadband Modified Monopole by the Use of Staircase Parasitic Rings**

Cláudio Saunders Filho, *CComGEx, Brazil*  
Maurício Henrique Costa Dias, José Carlos Araújo dos Santos, *Instituto Militar de Engenharia, Brazil.*

**Planar Elliptical UWB Monopole Antenna With High Efficiency**

André Lages, *Federal University of Para, Brazil*  
Marcelo Kawakatsu, *Universidade Federal do Pará (UFPA), Brazil*  
Victor Dmitriev, *Universidade Federal do Pará, Brazil.*

**Printed Grating Monopole Antenna for DTV Applications**

José Morais, *UFRN, Brazil*  
Antonio Campos, *Universidade Federal do Rio Grande do Norte, Brazil.*

**Wideband multilayer microstrip antenna. Optimization of dielectric parameters on antenna bandwidth**

Rafal Przesmycki, Marian Wnuk, Leszek Nowosielski, Marek Bugaj, *Military University of Technology, Poland.*

**Comparison of Microstrip and Cavity-backed Cylindrical Wraparound Antennas**

Leandro Rodrigues, *UFPE, Brazil*  
Odilon Pereira Filho, *Federal University of Pernambuco, Brazil.*

**Analysis and Design of Microstrip Antennas by Artificial Neural Networks**

Francismari Noronha dos Santos, Sueli Souza Nascimento, Vitaly Rodriguez Esquerre, *Federal University of Bahia, Brazil*  
Fabrício Simões Silva, *Instituto Federal da Bahia, Brazil.*

**Full-Wave Analysis of Rectangular Microstrip Antenna on Metamaterial**

Humberto Fernandes, *UFRN-FEDERAL UNIVERSITY OF RIO GRANDE DO NORTE, Brazil*  
Marinaldo Sousa Neto, *UFRN, Brazil.*

**Dual-Band mobile phone antenna for RF protection of human head**

Rafal Przesmycki, Marian Wnuk, Leszek Nowosielski, Marek Bugaj, *Military University of Technology, Poland.*

**High gain Sierpinski Gasket fractal shape antenna designed for RFID**

Bruno Franciscatto, *IMEP-LAHC / MINATEC - Grenoble INP, France*  
Glaucio Fontgalland, *Universidade Federal de Campina Grande, Brazil*  
Tan-Phu Vuong, *INPG, France.*

**Exploring Dual-Band RFID Tag Antennas by Means of Asymmetric Dipoles**

Gilliard Malheiros-Silveira, *UNICAMP, Brazil*  
Angelo Moretti, *School of Electrical and Computer Engineering-UNICAMP, Brazil*  
Hugo Figueroa, *Unicamp, Brazil*  
Ricardo Yoshioka, *ELDORADO RESEARCH INSTITUTE, Brazil*  
José Bertuzzo, *Eldorado Research Institute, Brazil*

Leonardo Bravo, *Universidade Estadual de Campinas - UNICAMP Faculdade de Tecnologia - FT, Brazil.*

## **Monday, October 31, 2011**

### **8:00PM - 9:40AM Technical Session Mo-5 Room: Buzios**

#### **Optical Components, Designs and Related Topics**

Chair: Evandro Conforti, *Universidade de Campinas, Brazil.*

#### **Field enhancement in polymer waveguides fabricated by UV imprinting**

Pentti Karioja, *VTT Technical Research Centre of Finland, Finland.*

#### **Optical Generation of Low-Phase Noise Microwave Signals using Nonlinear MZM and Ultra-Long SOA**

André Luiz Garcia, *Duisburg University, Germany.*

#### **Dynamic Monochannel First-Order Polarization Mode Dispersion Compensation through Downhill Simplex Optimization**

Glauco Cesar Pereira Simões, *CPqD Research and Development Center in Telecommunications, Brazil*

Claudio Florida, *CPqD Research and Development Center in Telecommunications, Brazil*

Marcio Argentato, *CPqD, Brazil.*

#### **High-rejection optical filters patterned on organic-inorganic hybrids using UV laser direct writing**

Carlos Vicente, Vasco Fernandes, *University of Aveiro, Portugal*

Carlos Marques, Edison Pécoraro, Rogério Nogueira, *Instituto de Telecomunicações, Portugal*

Luis Carlos, Rute Ferreira, *University of Aveiro, Portugal*

Paulo André, *Instituto de Telecomunicações, Portugal.*

#### **Rigorous characterization of silicon nanowires and slot waveguides**

Azizur Rahman, David Leung, Namassivaye Kejalakshmy, Kenneth Grattan, *City University London, Great Britain.*

### **8:00PM - 9:40AM Technical Session Mo-6 Room: Pipa**

#### **Optical Amplifiers**

Chair: Aldário Bordonalli, *Universidade de Campinas, Brazil.*

#### **Dynamic EDFA Gain Spectrum Equalizer using Temperature Controlled Optoceramic Filter Array**

Vitor Nascimento, *CPqD Foundation, Brazil*

Júlio Oliveira, Vitor Ribeiro, *CPqD, Brazil*

Aldário Bordonalli, *UNICAMP - University of Campinas, Brazil.*

#### **Experimental analysis of system performance in an EDFA with pump driven in PWM mode**

Fernando Pereira, *Research and Development Center in Telecommunications, Brazil*

Luis Monte, *CPqD, Brazil*

Fábio Bassan, *Research and Development Center in Telecommunications, Brazil*

Eduardo Mobilon, *CPqD Telecom & IT Solutions, Brazil*

Julio Oliveira, *CPqD, Brazil.*

#### **Design of a Wideband Hybrid EDFA with a Fiber Raman Amplifier**

Matheus Beninca, *Federal University of Espirito Santo, Brazil*

Maria Pontes, *UFES, Brazil*

Marcelo Segatto, *Universidade Federal do Espírito Santo, Brazil.*



**Experimental Analysis of the Spectral Broadening in a Data Eraser/Rewriter based on a Saturated UL-SOA**

Napoleão Ribeiro, *University of Campinas, Brazil*

Cristiano Gallep, *State University of Campinas, Brazil*

Evandro Conforti, *Unicamp, Brazil*.

**Investigation of compression of ultra-short pulses for fiber-based astronomical optical frequency comb generation**

Jose Chavez Boggio, *Leibniz-Institut für Astrophysik Potsdam, Germany*.

**8:00PM - 9:40AM Technical Session Mo-7 Room: Pirangi  
Printed Circuits and Resonators**

Chair: Marcos Tavares de Melo, *Universidade Federal de Pernambuco, Brazil*.

**Microstrip Power Divider for Integration of an Instantaneous Frequency Measurement System**

Ernesto Azevedo, Bruno Oliveira, Marcos Tavares de Melo, *Universidade Federal de Pernambuco, Brazil*.

**Theoretical Analysis and Design of Efficient Tunable Matching Networks**

Vitor Freitas, Jean-Daniel Arnould, *Institut de Microelectronique et photonique, France*

Philippe Ferrari, *Institut de Microélectronique et photonique, France*.

**Microwave Propagation Experiments on a Waveguide Loaded by an Array of Split-Ring Resonators**

Pedro José Castro, Joaquim José Barroso de Castro, *INPE, Brazil*

Joaquim P. Leite Neto, *National Institute for Space Research - INPE, Brazil*.

**Study of the performance of thin-wire dipoles using the time domain impulse response**

Renata Valério de Freitas, *University of São Paulo, Brazil*

Luiz Trintinalia, *University of Sao Paulo, Brazil*.

**8:00PM - 9:40AM Technical Session Mo-8 Room: Ponta Negra  
Propagation**

Chair: Gervásio Protásio dos Santos Cavalcante, *Universidade Federal do Pará, Brazil*.

**Development of Rain Attenuation Synthesizers for Earth-Space and Terrestrial Links in Tropical Climates**

Fernando Andrade, *PUC-Rio, Brazil*

Marcio Rodrigues, *Universidade Federal do Rio Grande do Norte (UFRN), Brazil*

Luiz da Silva Mello, *PUC/Rio, Brazil*.

**A FDTD-based propagator with a material independent PML formulation**

Cláudio Batista, Cassio Rego, *Universidade Federal de Minas Gerais, Brazil*

Luiz da Silva Mello, *PUC/Rio, Brazil*.

**Experimental Evaluation of Time Domain Energy Detection for Cognitive Radio Applications**

Carlos Rodriguez, *Centro de Estudos em Telecomunicações da PUC-Rio, Brazil*

Marlene Pontes, *PUC-Rio, Brazil*

Luiz da Silva Mello, *PUC/Rio, Brazil*

Rodrigo David, *Inmetro, Brazil*.

**Medium Wave DRM Field Trials in Brazil - Initial Results**

Marta Almeida, Rodolfo Souza, Rodrigo David, *Inmetro, Brazil*

Pedro Vladimir Gonzalez Castellanos, João A. Cal Braz, *INMETRO, Brazil*

Augusto Soledade, *Inmetro, Brazil*  
Flávio Ferreira, *Ministry of Communications, Brazil*  
Luiz da Silva Mello, *PUC/Rio, Brazil*.

**10:20AM – 12:20AM Plenary Session 2 Room: Ponta Negra**  
**Scanning Microwave Microscopy: New Electronic Eyes for the Nanoscale World**  
Roger Stancliff, *Agilent Technologies, USA*

**2:00PM - 3:40PM Technical Session Mo-9 Room: Buzios**  
**Active Circuits**

Chair: Denise Consonni, *UFABC, Brazil*.

**Recent Advances in Reconfigurable Microwave Filters**

Zabdiel Brito-Brito, *Jesuit University of Guadalajara, Jalisco, Mexico*  
Juan Carlos Bohórquez Reyes, *Universidad de los Andes, Bogotá, Colombia*  
Ignacio Llamas-Garro, *Centre Tecnologic de Telecomunicacions de Catalunya, Barcelona, Spain*

**Review of Advanced and Beyond CMOS FET Technologies for Radio Frequency Circuit Design**

Frank Ellinger, *Technische Universität Dresden, Germany*  
Martin Claus, Michael Schröter, *Technische Universität Dresden, Germany*  
Corrado Carta, *Dresden Technical University, Germany*.

**Design Methodology and Characterization of a SiGe BiCMOS Power Amplifier for 60GHz Wireless Communications**

Marcus Hellfeld, Stefan Hauptmann, *TU Dresden, Germany*  
Corrado Carta, *Dresden Technical University, Germany*  
Frank Ellinger, *Technische Universität Dresden, Germany*.

**Design of mm-Wave InP DHBT Power Amplifiers**

Tom Johansen, *Technical University of Denmark, Denmark*.

**2:00PM - 3:40PM Technical Session Mo-10 Room: Pipa**  
**Optical Systems, Networks and Related Topics II**

Chair: Maria Thereza Miranda Rocco Giralaldi, *IME, Brazil*.

**A Novel Double-Link Failures Restoration Algorithm Based on Optical Signal-to-Noise Ratio for All-Optical Networks**

Rodrigo de Freitas, *Federal University of Pernambuco, Brazil*  
Rodrigo Lira, Helder Pereira, *University of Pernambuco, Brazil*  
Daniel Chaves, *Universidade Federal de Pernambuco, Brazil*  
Carmelo Bastos-Filho, *University of Pernambuco, Brazil*  
Joaquim Martins-Filho, *Federal University of Pernambuco, Brazil*.

**Physical Impairments on High Aggregate Data Rate Passive Coherent Optical Networks**

Jacklyn Reis, Darlene Neves, António Teixeira, *Instituto de Telecomunicações, Portugal*.

**Improvement in Dynamic Equalization Performance of a Coherent Receiver by CMA Gain Adaptation: Simulation and Experimental Analysis of a 112 Gb/s PM-QPSK Transmission**

Vitor Ribeiro, Julio Diniz, Eduardo Rosa, *CPqD, Brazil*  
Aldário Bordonalli, *UNICAMP - University of Campinas, Brazil*  
Julio Oliveira, *CPqD, Brazil*.

**Evaluation of Hybrid WDM/OCDM Technology with Optical Codes Conversion in**

### **OBS Networks**

Lidia Galdino, José Maranhão, Mario Tosi Furtado, *University of Campinas, Brazil*

Luiz Henrique Bonani, *UFABC, Brazil*

Edson Moschim, *State University of Campinas, Brazil.*

### **Statistical Characteristics of Free Space Optical Systems Employing Transmission Spatial Diversity**

Jose Paulo Oliveira, *Universidade de Pernambuco, Brazil.*

### **2:00PM - 3:40PM Technical Session Mo-11 Room: Pirangi**

#### **Propagation and Related Topics II**

Chair: João Crisóstomo Weyl Albuquerque Costa, *Universidade Federal do Pará, Brazil.*

### **Handover anticipation in a hybrid GPON-WiFi network employing Fuzzy logic**

Marcos Mocarzel, *INATEL - Instituto Nacional de Telecomunicações, Brazil*

Sandro Rossi, *CPqD Telecom & IT Solutions, Brazil*

Joao Pozzuto, *CPqD, Brazil*

Amilcar Cesar, *EESC-USP, Brazil.*

### **On the $k\mu/\gamma$ composite distribution: A Generalized Multipath/Shadowing Fading Model**

Paschalis Sofotasios, *University of Leeds, Great Britain.*

### **Electromagnetic Axisymmetric Analysis of Monopole Antenna Over a $>$ Perfectly Electric Ground Plane by a Meshless Local Petrov-Galerkin Method**

Fernando Moreira, *UFMG, Brazil.*

### **Characteristic basis function method using 3D Greens function for propagation over rough terrains**

Marcos Pacheco, William E. da Silva, *Graduate Program in Electrical Engineering, Federal University of Minas Gerais, Brazil*

Cassio Rego, *Universidade Federal de Minas Gerais, Brazil.*

### **2:00PM - 3:40PM Technical Session Mo-12 Room: Ponta Negra**

#### **Antennas**

Chair: Adaildo Gomes D'Assunção, *UFRN, Brazil.*

### **Wideband Low Profile Antennas and Metamaterials**

Begaud Xavier, *Institut Telecom - Telecom ParisTech, Paris, France,* and Anne Claire Lepage, *Institut Telecom - Telecom ParisTech, Paris, France*

### **Omnidirectional ADE Antennas with Shaped Main Reflector Described by Local Conic Sections Sequentially Concatenated**

Rafael Penchel, *PUC-Rio, Brazil*

José Bergmann, *Pontificia Universidade Católica do Rio de Janeiro, Brazil*

Fernando Moreira, *UFMG, Brazil.*

### **Design of Omnidirectional Dual Reflector Antenna: Case of Main Reflector with Circular Generatrix**

José Bergmann, *Pontificia Universidade Católica do Rio de Janeiro, Brazil*

Sandro Zang, *PUC-Rio, Brazil.*

### **Characterization UWB of wire antennas in the space-time domain**

Weber C. P. dos Anjos, *Graduate Program in Electrical Engineering, Federal University of Minas Gerais, Brazil*

Cassio Rego, *Universidade Federal de Minas Gerais, Brazil.*

### **4:20PM - 6:20PM Poster Session PS-2 Room: Genipabu**

### **Link planning for multidomain optical networks using genetic algorithm**

Eduardo Queiroz, *Universidade de São Paulo, Brazil*

Amilcar Cesar, *EESC-USP, Brazil*.

### **A Model to Allow Remote and Distributed Simulation of Optical Networks using XML**

Carmelo Bastos-Filho, Adson Matoso, *University of Pernambuco, Brazil*

Daniel Chaves, Joaquim Martins-Filho, *Federal University of Pernambuco, Brazil*.

### **Performance of Wavelength Assignment Heuristics in a Dynamic Optical Network with Adaptive Routing and Traffic Grooming**

Paulo Ribeiro Lins Júnior, *Universidade Federal de Campina Grande, Brazil*

Marcelo Alencar, Michael Barros, *Federal University of Campina Grande, Brazil*.

### **Failure Probability of Optical Fibre under High Optical Power and Small Bend Diameters**

Fátima Domingues, *Universidade de Aveiro, Portugal*

Ana Rocha, *Instituto de Telecomunicações and Departamento de Física, Universidade de Aveiro, Portugal*

Paulo André, *Instituto de Telecomunicações, Portugal*.

### **Field Trial of an Inband OSNR Monitor Based on Polarization Extinction**

Claudio Floridia, Edson Wilson Bezerra, *CPqD Research and Development Center in Telecommunications, Brazil*

Mariana Massimino Feres, *University of São Paulo, Brazil*

Murilo A Romero, *Universidade de São Paulo, Brazil*

Glauco Cesar Pereira Simões, *CPqD Research and Development Center in Telecommunications, Brazil*.

### **Compact, Automatic Set-Up for Ultra-Weak Photon Emission Measurements in Organisms**

Eduardo Bertonha, *Federal University of Technology - Paraná, Brazil*

Samuel Santos, *Unicamp, Brazil*

Cristiano Gallep, *State University of Campinas, Brazil*

Evandro Conforti, *Unicamp, Brazil*.

### **Power Transients in Hybrid Optical Amplifiers (EDFA + DFRA) Cascades**

Bárbara Dumas, *Universidad Técnica Federico Santa María, Chile*.

### **Optical sensor based on etched fiber Bragg gratings for assessment of biodiesel quality**

Ricardo Kamikawachi, *Federal University of Technology - Paraná, Brazil*

João Paulo da Fonseca, Jafahr Gondek, *Federal University of Technology - Paraná, Brazil*

Gustavo Possetti, *Universidade Tecnológica Federal do Paraná, Brazil*

Marcia Muller, *Federal University of Technology - Paraná, Brazil*

José Fabris, *Federal University of Technology - PR, Brazil*.

### **Hydrogen Detection Using Surface Plasmon Resonance on Palladium-Siloxane films**

Gustavo Cavalcanti, Eduardo Fontana, Antonio Costa, *Universidade Federal de Pernambuco, Brazil*.

### **Photonic Band Gaps Exploration in Air/Silicon Sub-Lattices Unitary Cells**

Gilliard Malheiros-Silveira, *UNICAMP, Brazil*

Vitaly Rodriguez Esquerre, *Federal University of Bahia, Brazil*

Hugo Figueroa, *Unicamp, Brazil*.

### **Theoretical Analysis of the Minimization of Thermal Effects on the Coupling Length of Directional Couplers.**

Joaquim Júnior Isídio de Lima, *Universidade Federal da Bahia, Brazil*

Vitaly Rodriguez Esquerre, Bernardo Yugi Dantas, *Federal University of Bahia, Brazil*.

### **A Comparison Between Numerical Integration Techniques for EFIE Singular Kernels**

Gabriel Santiago, Luiz Trintinalia, *University of Sao Paulo, Brazil.*

### **Numerical Analysis of Cylindrical Nanodipoles by Linear Moment Method**

Karlo Costa, Victor Dmitriev, *Universidade Federal do Pará, Brazil.*

### **Wireless Sensor Network Analysis Using the Finite Element Boundary Integral Numerical Technique**

Juliano Mologni, *ESSS - Engineering Simulation & Scientific Software, Brazil*

Kaku Saito, *Petrobras, Brazil.*

### **Modified Nicolson-Ross-Weir (NRW) method to retrieve the constitutive parameters of low-loss materials**

Adriano de Paula, *Instituto Nacional de Pesquisas Espaciais, Brazil*

Joaquim José Barroso de Castro, *INPE, Brazil*

Mirabel Rezende, *Instituto de Aeronautica e Espaço, Brazil.*

### **Simulating the electromagnetic field in microwave ovens**

Jorge Monteiro, Luis Costa, Manuel Valente, Tiago Santos, *University of Aveiro, Portugal*

João Sousa, *TEKA Portugal, Portugal.*

### **Unambiguous Determination of Constitutive Parameters of a Metamaterial Slab**

Joaquim José Barroso de Castro, *INPE, Brazil*

Ugur Cem Hasar, *Ataturk University, Turkey.*

### **Yagi-Uda Antenna Optimization by Ellipsoid Algorithm**

Alisson Amaral, Ursula Resende, *CEFET-MG, Brazil*

Eduardo Gonçalves, *Centro Federal de Educação Tecnológica de Minas Gerais, Brazil.*

### **Evaluation of Singular Integral Equation in MoM Solution of Electromagnetic Scattering by Bodies of Revolution using Elliptic Integrals**

Camila Vidal, *CEFET- MG, Brazil*

Ursula Resende, Sandro Gonçalves, *CEFET-MG, Brazil.*

### **Formulation of Double Screen FSS Analysis Using FullWave Method**

Tércio Silva, Antonio Campos, *Universidade Federal do Rio Grande do Norte, Brazil.*

### **Adaptive Array Antenna in Receive Mode**

Manoel Alves, *Institute for Advanced Studies in Communications (IECOM), Brazil*

Marcelo Alencar, *Federal University of Campina Grande, Brazil.*

### **MICROWAVE DIELECTRIC PROPERTIES OF $\text{CaTi}_{1-x}(\text{Nb}_{2/3}\text{Li}_{1/3})\text{XO}_3$ -delta (CNLTOX)**

Antonia Daniele Bruno Costa, *University Federal do Ceará, Brazil*

Rodrigo Costa, Francisco Welton de Oliveira Amarante, *Universidade Federal do Ceará, Brazil*

Tatiana Maia Fernandes, *Federal University of Ceará, Brazil*

Gilberto D. Saraiva, *Universidade Estadual do Ceará, Brazil*

Marcelo Antonio Santos da Silva, *Federal University of Ceará, Brazil*

Sergio Sombra, *UFC, Brazil.*

### **Electric and Magnetic Responses**

Joaquim P. Leite Neto, *National Institute for Space Research - INPE, Brazil.*

### **Frequency Domain Reflectometry in the Determination of Dielectric Constant of Bentonite**

Ivson dos Anjos, Raimundo Freire, *Federal University of Campina Grande, Brazil*

Silvio Barbin, *Universidade de São Paulo, Brazil.*

### **Microwaves dielectric properties of $\text{Y}_3\text{Fe}_5\text{O}_{12}$ $\text{CaCu}_3\text{Ti}_4\text{O}_{12}$ composites**

Manuel Graça, *Aveiro University, Portugal*

Helainne Girão, *UFC - Ceará, Brazil*

Antonio Sombra, *UFC, Brazil*

Karlo David Saboia, *UFC - Ceará, Brazil*

Luis Costa, Filipe Amaral, Manuel Valente, *University of Aveiro, Portugal.*

### **Design of Metamaterials Using Artificial Neural Networks**

Cristhianne Vasconcelos, *Federal University of Rio Grande do Norte, Brazil.*

### **Characterization and validation of a textile substrate for RF applications**

Angelo Moretti, Gilliard Malheiros-Silveira, *School of Electrical and Computer Engineering-UNICAMP, Brazil*

Hugo Figueroa, *Unicamp, Brazil*

Leonardo Bravo, *Universidade Estadual de Campinas - UNICAMP Faculdade de Tecnologia - FT, Brazil*

Marcos Gonçalves, Francisco Arnold, *University of Campinas - School of Technology, Brazil*

Ricardo Yoshioka, José Bertuzzo, *Eldorado Research Institute, Brazil.*

### **Reduction of the Radar Cross Section of a Wind Turbine Using a Microwave Absorbing Material**

Mauro Angelo Alves, *Instituto de Aeronautica e Espaco, Brazil*

Luiza Folgueras, *Comando-Geral de Tecnologia Aeroespacial, Brazil*

Mirabel Rezende, *Instituto de Aeronautica e Espaço, Brazil.*

### **A New Concept of RAM-Radiation Absorbent Material: Applying Corrugated Surfaces to Improve Reflectivity**

Mauricio Weber Silva, Luiz Carlos Kretly, *University of Campinas, Brazil.*

### **Microwave radiation: an alternative method to sinter utilitarian porcelain**

Jorge Monteiro, Manuel Valente, Tiago Santos, Luis Costa, *University of Aveiro, Portugal*

João Sousa, *TEKA Portugal, Portugal.*

### **Comments on the FCC Approval of Finite Element Method for Biomedical Transmitters**

Juliano Mologni, *ESSS - Engineering Simulation & Scientific Software, Brazil*

Leandro Pecebon, *lpercebon@esss.com.br, Brazil*

Marco Antonio Robert Alves, *UNICAMP - Universidade Estadual de Campinas, Brazil*

Edmundo Braga, *UNICAMP, Brazil.*

### **Radiation from Mammography: Diagnostic or Cancer Induction?**

Clarissa Loureiro, *Unicamp, Brazil.*

### **A Three-dimensional Microcellular Line-of-Sight Propagation Model using UTD Wedge Diffraction**

Edgar Silva Jr., *State University of Feira de Santana, Brazil.*

### **Cross Layer Model to Predict Performance Parameters on OFDM-Based Wireless Networks**

Bruno Castro, *UFPA, Brazil*

Igor Ruiz Gomes, *UFPA / CESUPA, Brazil*

Gervásio P. S. Cavalcante, *UFPA, Brazil*

Carlos Francês, *Universidade Federal do Pará, Brazil*

Victor Machado, *Federal University of Para, Brazil*

Carlos Silva, Rennan Silva, João Crisostomo Weyl Albuquerque Costa, *Universidade Federal do Pará, Brazil.*

### **Influence of Polarization Effects of the Antennas in a WLAN Coverage Area**

Josiane Rodrigues, *UFPA, Brazil*

Simone Fraiha, *Universidade Federal do Pará, Brazil*

Jasmine Araújo, Hermínio Gomes, *UFPA, Brazil*

Carlos Francês, *Universidade Federal do Pará, Brazil*

Gervásio P. S. Cavalcante, *UFPA, Brazil.*

### **Spectrum Sensing over $\eta$ - $\mu$ Fading Channel**

Fabio von Glehn, *Universidade de Brasília, Brazil*

Diogo Sanders Starling Chaves, *Universidade de Brasília, Brazil*

Ugo Dias, *University of Brasilia, Brazil.*

**Some Results of Effective Ground Conductive of Rio Grande do Norte State**

Walcker Gomes, Antonio Campos, *Universidade Federal do Rio Grande do Norte, Brazil*

Ronaldo Martins, *UFRN, Brazil.*

**Characteristics of nighttime West-to-East VLF waves propagation using the South America VLF Network (SAVNET)**

Jorge Samanes, *Universidade Presbiteriana Mackenzie, Brazil.*

**Bayesian Estimators by Particle Filtering**

Rafael de Oliveira Ribeiro, Alex Miyamoto Mussi, Taufik Abrão, *State University of Londrina, Brazil.*

**Fractional E1 Transport in Gigabit Passive Optical Network**

Marcelo Alves Guimarães, *São Carlos Engineering School, University of São Paulo, Brazil*

Monica Rocha, *Universidade de São Paulo, Brazil*

Sandro Rossi, *CPqD Telecom & IT Solutions, Brazil*

Marcos Mokarzel, *INATEL - Instituto Nacional de Telecomunicações, Brazil.*

**Digital Selective Calling system for controlling of communications by terrestrial waves on the Maritime Mobile Service**

Mário Sousa, *CIABA, Brazil*

Evaldo Gonçalves Pelaes, *UFPA/NESC, Brazil.*

**Impact Evaluation of Radio over Fiber Technology in Wireless Sensor Networks**

Raphael Assumpção, Omar Branquinho, *Pontificia Universidade Católica de Campinas, Brazil*

Marcelo Abbade, *Pontificia Universidade Católica de Campinas, Brazil*

Daniel Lona, *State University of Campinas - UNICAMP, Brazil*

Arismar Cerqueira Sodré Junior, *UNICAMP, Brazil.*

## Tuesday, November 1, 2011

### 8:00PM - 9:40AM Technical Session Tu-13 Room: Buzios

#### Optical Sensors

Chair: Eduardo Fontana, *Universidade Federal de Pernambuco, Brazil.*

#### FBG Interrogation and the Benchmark for Algorithms in the Processing of Experimental Data

Aleksander Paterno, *Santa Catarina State University, Brazil*

Rodolfo Patyk, *Federal University of Technology, Brazil*

Guilherme Zilli, *Universidade do Estado de Santa Catarina, Brazil*

Cleberson Cunha, *UDESC, Brazil*

Lucas Negri, *Universidade do Estado de Santa Catarina, Brazil*

José Fabris, *Federal University of Technology - PR, Brazil*

Hypolito Kalinowski, *Federal University of Technology - Parana, Brazil*

Yujuan Wang, *Santa Catarina State University, Brazil.*

#### Characterization of an Amplified OTDR Fiber-optic Multipoint Sensor System

Jehan Nascimento, Joaquim Martins-Filho, Jairon Guimarães, *Federal University of Pernambuco, Brazil*

Eliel Arcanjo, *University of Pernambuco, Brazil*

Marcionilo J. da Silva, *Universidade Federal de Pernambuco, Brazil.*

#### Contributions to the Optimization of an Optical Sensor for Acetylene and Carbon Monoxide

Vladimir Soares, Caio Morais, Ricardo de Lima, Eduardo Fontana, *Universidade Federal de Pernambuco, Brazil*

Joaquim Martins-Filho, *Federal University of Pernambuco, Brazil*.

**Fiber Optic Bending Loss Sensor for Application on Monitoring of Embankment Dams**

Livia Ribeiro, *Research and Development Center in Telecommunications, Brazil*.

**8:00PM - 9:40AM Technical Session Tu-14 Room: Pipa  
Printed Antennas**

Chair: Fernando José da Silva Moreira, *Universidade Federal de Minas Gerais, Brazil*.

**Dielectric Resonator Antennas Based in BiYWO<sub>6</sub> and Operating at 3.3GHz:Electrical Properties Study**

Sergio Sombra, *UFC, Brazil*.

**Radiation Efficiency of Rectangular Slot Resonator with Multilayers Photonic Material**

Humberto Fernandes, *UFRN-FEDERAL UNIVERSITY OF RIO GRANDE DO NORTE, Brazil*

Humberto Andrade, *Federal University of Rio Grande do Norte, Brazil*

Roberto França, *UFRN, Brazil*

Anderson Silva, *Federal University of Rio Grande do Norte, Brazil*.

**Analysis of dual-fed circularly-polarized circular patch antennas for educational purposes**

Alexis Tinoco, Denis Maciel, Daniel Nascimento, José Carlos da Silva Lacava, *Instituto Tecnológico de Aeronáutica, Brazil*

Sidnei Sant'Anna, *Instituto Nacional de Pesquisas Espaciais, Brazil*.

**Multi-band printed antennas impedance characterization using a FDTD/WP-PML based methodology**

Glaucio Ramos, *Universidade Federal de São João del-Rei, Brazil*

Cassio Rego, *Universidade Federal de Minas Gerais, Brazil*.

**8:00PM - 9:40AM Technical Session Tu-15 Room: Pirangi  
Numerical Analysis and Methods in Photonics**

Chair: Hugo Enrique Hernández Figueroa, *Universidade Estadual de Campinas, Brazil*.

**Finite Element Characterisation of Photonic Crystal Fibers**

Azizur Rahman, *City University London, Great Britain*

Kejalakshmy Namassivayane, Arti Agrawal, Uthaman Muhammad, *City University, Great Britain*

Kenneth Grattan, *City University London, Great Britain*.

**Evolutionary Strategy Algorithm Applied to Optimize Micro-to-Nano Coupler Devices**

Carlos da Silva-Santos, *Instituto Federa de Educação, Ciência e Tecnologia, Brazil*.

**Analysis of Micro-to-Nano Coupling Techniques.**

Vitaly Rodriguez Esquerre, *Federal University of Bahia, Brazil*

C. E. Rubio-Mercedes, *State University of Matogrosso do Sul, UEMS, Brazil*

Uriel Cruz, *Federal University of Bahia, Brazil*.

**Propagation Characteristics Analysis of Subwavelength Grating Waveguides**

Matheus Silva Costa, Ana Jilvia Oliveira, Vitaly Rodriguez Esquerre, *Federal University of Bahia, Brazil*.



### **Wavelength Shift-Free All-Optical 2R Regenerator Based on Four-Wave Mixing**

Eric Fagotto, *Pontifical Catholic University of Campinas - PUC, Brazil*

Marcelo Abbade, *Pontifícia Universidade Católica de Campinas, Brazil.*

### **8:00PM - 9:40AM Technical Session Tu-16 Room: Ponta Negra**

#### **FSS Arrays and Printed Antennas**

Chair: José Ricardo Bergmann, *PUC-Rio, Brazil.*

#### **Microstrip Patch Antennas: An Historical Perspective of the Development**

Custódio Peixeiro, *Instituto de Telecomunicações/Instituto Superior Técnico, Technical University of Lisbon, Portugal*

#### **Experimental Investigation of FSS Cascading with Fractal Elements**

Robson Maniçoba, Antonio Campos, Tércio Silva, Adaildo D'Assunção, *Universidade Federal do Rio Grande do Norte, Brazil.*

#### **Analysis of Frequency Selective Surfaces With T-Shaped Pre-Fractals Patch Elements**

Clarissa Nóbrega, Marcelo Silva, *UFRN, Brazil*

Wellington Araujo, *Universidade Estadual da Paraíba, Brazil*

Paulo Silva, *Federal Institute of Education, Science and Technology of Paraíba, Brazil*

Adaildo D'Assunção, *Universidade Federal do Rio Grande do Norte, Brazil.*

#### **Complementary Split Ring Resonator Stop-Band Filter**

Davi Brito, *Federal University of Rio Grande do Norte, Brazil*

Adaildo D'Assunção, *Universidade Federal do Rio Grande do Norte, Brazil*

Humberto Fernandes, *UFRN-FEDERAL UNIVERSITY OF RIO GRANDE DO NORTE, Brazil*

Xavier Begaud, *Telecom ParisTech, France.*

#### **Microstrip filter with tilted ground plane**

Vitor Barros, *UFRN, Brazil*

Adaildo D'Assunção, *Universidade Federal do Rio Grande do Norte, Brazil*

Sandro da Silva, Antonio Vieira, Ana Ourique, *UFRN, Brazil.*

### **10:20AM – 12:20AM Plenary Session 3 Room: Ponta Negra**

#### **Opportunities and Developments in Utilization of White Spaces of Radio Spectrum**

Riku Pirhonen, *Aalto University, School of Electrical Engineering, Finland.*

### **2:00PM - 3:40PM Technical Session Tu-17 Room: Buzios**

#### **Optical Systems, Networks and Related Topics III**

Chair: Ben Hur Borges, *Universidade de São Paulo, Brazil.*

#### **Advanced Modulation Formats and Receiver Filtering Analysis of Optical WDM Systems with Optimized Distributed Raman Amplifiers**

Juliano Oliveira, Alexandre Freitas, Uíara de Moura, Eduardo Rosa, Julio Diniz, Júlio Oliveira, *CPqD, Brazil*

Murilo A Romero, *Universidade de São Paulo, Brazil.*

#### **Wide-Range Frequency Offset Estimator for DSP-based Optical Coherent Receivers**

Julio Diniz, Eduardo Rosa, Vitor Ribeiro, *CPqD, Brazil*

Aldário Bordonalli, *UNICAMP - University of Campinas, Brazil*

Julio Oliveira, *CPqD, Brazil.*

#### **Impact of Node Failure in Optical Packet Switching Metropolitan-Area Networks**

Indayara Martins, *DSIF-FEEC-Unicamp, Brazil*

Felipe Rudge Barbosa, *FEEC-Unicamp, Brazil*

Edson Moschim, *State University of Campinas, Brazil.*

**An Adaptive-Alternative Routing Algorithm for All-Optical Networks**

Andre Xavier, Rodrigo Lira, Carmelo Bastos-Filho, *University of Pernambuco, Brazil*

Joaquim Martins-Filho, *Federal University of Pernambuco, Brazil*

Daniel Chaves, *Universidade Federal de Pernambuco, Brazil.*

**Performance analysis in time-gated spectral phase-encoded time spreading (SPECTS) OCDMA systems**

Pedro Bertarini, *Universidade de São Paulo, Brazil*

Anderson Sanches, Ben Hur Borges, *University of São Paulo, Brazil.*

**Analysis of Multimode Fiber Impulse Response Simulation Models**

Victor Teichmann, *Universidade de Brasília, Brazil*

Darli Mello, *UnB, Brazil*

Andre Barreto, *Universidade de Brasília (UnB), Brazil.*

**2:00PM - 3:40PM Technical Session Tu-18 Room: Pipa**

**Numerical Methods**

Chair: Flavio Hasselman, *PUC-Rio, Brazil.*

**A Novel Method to Solve Eigenvalue Problems of Helmholtz Vector Wave Equation without DC Modes**

Marcos Gonçalves, Francisco Arnold, *University of Campinas - School of Technology, Brazil*

Leonardo Bravo, *Universidade Estadual de Campinas - UNICAMP Faculdade de Tecnologia - FT, Brazil*

Talía Santos, *School of Technology of Unicamp, Brazil*

Hugo Figueroa, *Unicamp, Brazil.*

**The Step by Step Development of NRW Method**

Alexandre Vicente, *Institute of Aeronautics and Space, Brazil*

Gustavo Dip, *Universidade de São Paulo, Brazil*

Cynthia Junqueira, *Centro Técnico Aeroespacial-Instituto de Aeronáutica e Espaço, Brazil.*

**Analysis of multilayer circuits by an efficient iterative technique**

Alexandre Serres, *Universidade Federal de Campina Grande, Brazil.*

**Green's functions of multilayered cylindrical structures and their application for radiation, propagation and scattering problems solving**

Sergey Knyazev, Sergey Shabunin, Lubov Lesnaya, *Ural Federal University, Russia.*

**Discrete Mode Matching Analysis of Cylindrical Microstrip Structures**

Marcos Heckler, *Universidade Federal do Pampa, Brazil*

Achim Dreher, *German Aerospace Center, Germany.*

**2:00PM - 3:40PM Technical Session Tu-19 Room: Pirangi**

**Microwave Measurements and Applications**

Chair: Cássio Gonçalves do Rego, *Universidade Federal de Minas Gerais, Brazil.*

**Equipment for microwave assisted thermal cracking of hydrocarbons**

José Thomaz Senise, Luiz Jermolovicius, Edmilson Castro, *Instituto Maua de Tecnologia, Brazil*

Renata Nascimento, *INSTITUTO MAUÁ DE TECNOLOGIA, Brazil*

Marina Mucedola Cinquini, *Centro Universitário do Instituto Mauá de Tecnologia, Brazil.*

**R/Q Measurements in Klystron Cavities**

Robson K. B. e Silva, *Navy Technology Center at Sao Paulo, Brazil*

Daniel Teixeira Lopes, *Instituto de Pesquisas Energéticas e Nucleares, Brazil*

Claudio Motta, *University of Sao Paulo, Brazil.*

### **A microwave window for high power TWTs**

Daniel Teixeira Lopes, *Instituto de Pesquisas Energéticas e Nucleares, Brazil*

Claudio Motta, *University of Sao Paulo, Brazil.*

### **Measurement of the Distribution of Electromagnetic Field and Equivalent Plane-wave Power Density from Multisource Inside a Vehicle.**

Raquel Rodrigues, *Universidade Federal de Campina Grande, Brazil.*

### **Conceptual Design of a Coupled-Cavity 6.6 GHz Monotron**

Joaquim José Barroso de Castro, *INPE, Brazil.*

## **2:00PM - 3:40PM Technical Session Tu-20 Room: Ponta Negra**

### **Adaptive and Reconfigurable Antennas**

Chair: Antonio Jerônimo Belfort de Oliveira, *Universidade Federal de Pernambuco, Brazil.*

### **Robust Broadband Beamforming Algorithms Using Efficient Realisation Method**

Md. Selim Hossain, *University of New South Wales at Australian Defence Force Academy, Australia*

Lal Godara, *UNSW @ADFA, Australia*

Md. Rakibul Islam, *University of New South Wales at Australian Defence Force Academy, Australia.*

### **Low Cost Smart Antenna Array Hardware Implementation**

Adilson Chinatto Jr, *Unicamp, Brazil*

Cynthia Junqueira, *Centro Técnico Aeroespacial-Instituto de Aeronáutica e Espaço, Brazil*

João Romano, *Unicamp, Brazil.*

### **Simultaneous Photonic Substrate and Superconductor Patch Smart Antennas Array**

Humberto Fernandes, *UFRN-Federal University of Rio Grande do Norte, Brazil*

Hugo Maia, Leonardo Caetano, *UFRN, Brazil.*

### **Integrating Laser Diodes in a Reconfigurable Antenna System**

Youssef Tawk, *University of New Mexico, USA*

Joseph Costantine, *California State University Fullerton, USA*

Silvio Barbin, *Universidade de São Paulo, Brazil*

Christos Christodoulou, *University of New Mexico, USA.*

### **On the Design of Square Ring Fractal Antenna and Its Backscattering**

Raj Kumar, *ARDE,DIAT(DU), India.*

## **4:20PM - 6:20PM Poster Session PS-3 Room: Genipabu**

### **Performance of Dynamic Optical Networks with EDFA's Equipped with Automatic Gain Control**

Victor Oliveira, *Federal University of Semi-arid Region, Brazil*

Iguatemi E. Fonseca, *Federal University of Semi-Arid Region, Brazil.*

### **The Impact of PMD and PDL on the Performance of DPSK and DQPSK Optical Signals at 40 and 100 Gb/s**

Fátima Regina Barroso, *Universidade Federal do Ceará, Brazil*

João B. R. Silva, *Federal University of Ceará, Brazil.*

### **Dependence of the Transmission Performance of Multi-Band OFDM-UWB Signals in LR-PONs on the Modulator Bias and Driving Voltages**

Tiago Ferreira Alves, *Group of Research on Optical Fibre Telecommunication Systems, Instituto de Telecomunicações., Portugal*

Adolfo Cartaxo, *IST, Portugal.*

### **Performance Evaluation of a Multirate, Multiclass OCDM/WDM Optical Packet Switch**

Thiago Raddo, Anderson Sanches, José Valdemir dos Reis Jr, Ben Hur Borges, *University of São Paulo, Brazil.*

### **O-band passive mode-locked Raman fiber laser based on single wall carbon nanotubes as saturable absorbers**

David Steinberg, Lucia Saito, *Universidade Presbiteriana Mackenzie, Brazil*  
Henrique Guimaraes Rosa, *Laboratório de Fotônica, Universidade Presbiteriana Mackenzie, Brazil*  
Eunézio De Souza, *Mackenzie, Brazil.*

### **Continuous Ultra-Broadband Light Sources for Optical Coherence Tomography**

Livia Barbosa, Renato E. Araujo, *Universidade Federal de Pernambuco, Brazil.*

### **Wavelength to Time Interval Demodulation Employing a Tunable Micro-ring Resonator**

German Vargas, *Florida International University, USA*  
Roberto Panepucci, *Centro de Tecnologia da Informação, Brazil.*

### **Optimal Design of a DFRA Considering pump-to-pump FWM**

Sebastián Lara, *Federico Santa Maria Technical University, Chile.*

### **Field-Trial Demonstration of a One-Pump Fiber Optics Parametric Amplifier with Independent Polarization Gain**

Meire Fugihara, *Unicamp, Brazil.*

### **Equivalent Circuit of a Semiconductor Optical Amplifier Chip with the Bias Current Influence**

Rafael Carvalho Figueiredo, Eduardo Cavalcanti Magalhães, *University of Campinas - UNICAMP, Brazil*  
Napoleão Ribeiro, *University of Campinas, Brazil*  
Cristiano Gallep, *State University of Campinas, Brazil*  
Evandro Conforti, *Unicamp, Brazil.*

### **Assessment of biodiesel-diesel blends with an optical fiber grating sensor**

Bárbara Heidemann, Gustavo Possetti, *Universidade Tecnológica Federal do Paraná, Brazil*  
Lilian Côcco, Carlos Yamamoto, *UFPR, Algeria*  
Marcia Muller, *Federal University of Technology - Paraná, Brazil*  
José Fabris, *Federal University of Technology - PR, Brazil.*

### **Fiber Bragg Grating Sensing Applications in Temperature Monitoring of Three-Phase Induction Motors**

Kleiton Sousa, *UTFPR Universidade, Brazil*  
Angelo Hafner, Marcos Cresppin, Jonas Somenzi, Valmir de Oliveira, *Federal University of Technology - Paraná, Brazil*  
Hypolito Kalinowski, *Federal University of Technology - Parana, Brazil*  
Jean Carlos Cardozo da Silva, *Federal University of Technology - Paraná, Brazil.*

### **A New Dual Band Composite Right Left Handed Branch Line Coupler**

Iulia Andreea Mocanu, Teodor Petrescu, George Lojewski, *University Politehnica of Bucharest, Romania.*

### **FBG Refractometry and Electrical Impedance Analysis in Fuel Samples Characterization**

R. Zobot, *University of Santa Catarina State, Brazil*  
Aleksander Paterno, *Santa Catarina State University, Brazil*  
Guilherme Zilli, *Universidade do Estado de Santa Catarina, Brazil*  
Cleberson Cunha, *UDESC, Brazil*  
Lucas Negri, *Universidade do Estado de Santa Catarina, Brazil*  
José Fabris, *Federal University of Technology - PR, Brazil*

Hypolito Kalinowski, *Federal University of Technology - Parana, Brazil.*

**Optical Fiber Sensor for characterization of Piezoelectric Transducers**

Ricardo Silva, *Universidade Tecnológica Federal do Paraná, Brazil*

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**Periodic Segmented Waveguide Analysis by Using the 2D Finite Element Method**

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**Analysis and Design of Directional Couplers Based on Al<sub>x</sub>Ga<sub>1-x</sub>As by Using an Efficient Neural Networks: A Design Tool Simulation Implemented in C/C++**

Tadeu Abreu Cerqueira, *Federal University of Bahia, Algeria*

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**Parallel Bio-Inspired Algorithms in Computational Electromagnetics Applications**

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**X-band microstrip antenna bandwidth enhancement using multi-walled carbon nanotubes**

Gelza Barbosa, Marbey M. Mosso, *PUC-Rio, Brazil*

Fernando Junior, Rogério Filho, Fernando Monteiro, *Puc-rio, Brazil.*

**Novel Encoding in Chipless RFID Using Group Delay Characteristics**

Raji Nair, Etienne Perret, *Grenoble-inp, France*

Smail Tedjini, *Grenoble-inp/lcis, France.*

**Modeling HF noise behavior in a SiGe heterojunction bipolar transistor for different collector currents**

Anibal Pacheco-Sanchez, *National Polytechnic Institute, Mexico.*

**Merging Reconfigurable and Deployable Antennas for Space Applications**

Joseph Costantine, *California State University Fullerton, USA*

Youssef Tawk, Christos Christodoulou, *University of New Mexico, USA*

Silvio Barbin, *Universidade de São Paulo, Brazil.*

**A PPM Gaussian Transmitter for UWB using a compact Phase Detector**

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**Lightning-induced currents in people with prostheses**

Alcides Silva, *Universidade de Brasilia - UnB, Brazil*

Plinio Ganime, *University of Braslia, Brazil.*

**Numerical Solution of Poissons and Maxwells Equations on Graphics Processors using CUDA**

Dinart Braga, *Universidade Federal de Campina Grande, Brazil*

Martijn de Greef, *Universiteit van Amsterdam, The Netherlands*

Davi Correia, *FCI, The Netherlands.*

**One and two dimensional devices electromagnetic simulation using parallelism on GPUs**

Maicon Faria, Adriano Ferreira, *Unicamp, Brazil*

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Carlos Silva-Santos, *Universidade Estadual de Campinas, Brazil*

Zady Salazar, *UNICAMP, Cuba.*

### **A Java Platform for the Implementation of the Finite-Difference Time-Domain Method**

Ana O. Rodrigues, Juliano J. Viana, *Logicstyle, Brazil*

Jaime Ramirez, *UFMG, Brazil*.

### **Pedagogical Microwave Design of Photonic Crystal Waveguides**

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Sergio Sombra, *UFC, Brazil*

Vitaly Felix Rodriguez-Esquerre, *Federal University of Bahia, Brazil*.

### **Effects of Anode and Focusing Electrode Translation and Negative Potential Applied to the Focusing Electrode in Electron Beam of C-Band TWT Type Valves**

Marcelo Pinto, *University of Sao Paulo, Brazil*

Cesar Xavier, *Instituto de Pesquisas Energéticas e Nucleares/CNEN-SP - University of Sao Paulo, Brazil*

Claudio Motta, *University of Sao Paulo, Brazil*.

### **A Study of a PPM Focusing System for a C-Band Power TWT**

Gabriel Souza Santos, *University of São Paulo, Brazil*

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### **Unloaded Q-Factor Measurements in Klystron Cavities**

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### **On the Design of Rectangular Cut Circular Fractal Antenna for Ultra Wideband System**

Raj Kumar, *ARDE, Pune attached, India*.

### **A modified Minkowski fractal monopole**

Livia Barbosa, Antonio Jeronimo Belfort de Oliveira, Lidiane Araujo, *Universidade Federal de Pernambuco, Brazil*

Crislane Silva, *UFPE, Brazil*.

### **A novel Sierpinski carpet fractal dipole**

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Crislane Silva, *UFPE, Brazil*

Livia Barbosa, Antonio Jeronimo Belfort de Oliveira, *Universidade Federal de Pernambuco, Brazil*.

### **Reconfigurable Electromagnetic Frequency Selective Surface with High Q-Factor Transmission Resonance**

Victor Dmitriev, *Universidade Federal do Pará, Brazil*

Marcelo Kawakatsu, *Universidade Federal do Pará (UFPA), Brazil*.

### **Study of the Geometric Complexity Reduction of a Quasi-Fractal FSS using WCIP**

Emanuele Montalvão, Augusto Montalvão, Adaildo D'Assunção, Laércio Mendonça, *Universidade Federal do Rio Grande do Norte, Brazil*

Alfredo Gomes Neto, *Federal Institute of Education, Science and Technology of Paraíba, IFPB, Brazil*.

### **Frequency Selective Surfaces With non Fractal Geometry**

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**Analysis of Semidefinite Relaxation Detector in MIMO Channel**

Alex Miyamoto Mussi, Taufik Abrão, *State University of Londrina, Brazil.*

**On the Design of Active Downconversion Mixers for Wireless Communications on a Carbon Nanotube FET Technology**

Jan Pliva, *TU Dresden, Germany*

Corrado Carta, *Dresden Technical University, Germany*

Martin Claus, Michael Schröter, *Technische Universität Dresden, Germany*

Frank Ellinger, *Technische Universität Dresden, Germany.*

**Analysis of the Cylindrical PML ABC for 2-D Finite Volume Simulations in the Frequency Domain**

Luísa Ribeiro, Marcela Novo, *Federal University of Bahia, Brazil.*

**Using the moment generating function for the performance assessment of optically preamplified direct-detection OFDM systems**

João Rebola, *Instituto de Telecomunicações, Lisbon, Portugal.*