

# **2013 IEEE 17th International Symposium on Power Line Communications and Its Applications**

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# Monday 25 March 2013

		Session 1: Signal Processing 1 (M1)	Session 2: Smart Grids/In-vehicle (M2)
		Venue: Conference Room 1	Venue: Conference Room 2
		Chair: Gerd Bumiller – Hochschule Ruhr West, Germany	Chair: Ralf Lehnert – Technische Universitaet Dresden, Germany
<b>09:40 – 11:00</b>	09:40	<b>Combining Techniques Performance Analysis in Spatially Correlated MIMO-PLC Systems</b> B. Nikfar, A.J.H. Vinck	<b>PLC Systems for Electric Vehicles and Smart Grid Applications</b> S. Barmada, M. Raugi, M. Tucci, Y. Maryanka, O. Amrani
	10:00	<b>Potential Impact of the CENELEC Spectral Mask on Broadband PLC Networks</b> P. Achaichia, M. Le Bot, P. Siohan	<b>PLC Noise and Channel Characterization in a Compact Electrical Car</b> M. Antoniali, M. De Piante, A.M. Tonello
	10:20	<b>Multi-User Power-line Communication</b> A.J.H. Vinck, B. Dai	<b>Experimental Evaluation on Narrow Band Power Line Communication in Medium and Low Voltage Smart Grids</b> A. Cataliotti, V. Cosentino, P. Russotto, D. Di Cara, G. Tinè
	10:40	<b>On Performance of Multiple-domain Diversity in Powerline Communication Networks</b> H. Gacanin, A. Ligata	<b>Noise Analysis of a Power-Line Communication Channel in an LVDC Smart Grid Concept</b> A. Pinomaa, J. Ahola, A. Kosonen, P. Nuutinen
<b>Coffee Break: 11:00 – 11:20</b>			
		Session 3: Protocols 1 (M3)	Session 4: Impulsive Noise (M4)
		Venue: Conference Room 1	Venue: Conference Room 2
		Chair: Masaaki Katayama – Nagoya University, Germany	Chair: Abe Snyders – University of Johannesburg, South Africa
<b>11:20 – 12:40</b>	11:20	<b>Enhancement of Backoff Algorithm in CSMA/CA Protocols for Broadband PLC</b> I. Tsokalo, R. Radeke, R. Lehnert	<b>A Study on Channel Estimation Under Class A Impulsive PLC Channel</b> H. Ando, A. Nakamura, K. Ohno, M. Itami
	11:40	<b>CSMA/CA: Improvements of the Contention Window Adaptation</b> S. Mudrievskyi, R. Radeke, R. Lehnert	<b>Impulsive Noise Generated by a Pulse Width Modulation Inverter: Modeling and Impact on Powerline Communication</b> K. Kilani, V. Degardin, P. Laly, M. Lienard, P. Degauque
	12:00	<b>Fairness of MAC Protocols: IEEE 1901 Vs. 802.11</b> C. Vlachou, J. Herzen, P. Thiran	<b>A New Impulsive Noise Cancellation Algorithm for Multi-wire Power Line Communications</b> X. Hu, F. Yin, Z. Chen
	12:20	<b>Cluster-based MAC and Resource Management for Quasi-Stationary Broadband Power Line Communication Networks</b> S. Choe, J. Yoo, Y. Louët	<b>Investigation on a New Combined Impulsive Noise Mitigation Scheme for OFDM Transmission</b> V.N. Papilaya, A.J.H. Vinck
<b>Lunch: 12:40 – 14:00</b>			

		<b>Session 5: Measurements (M5)</b>	<b>Session 6: Smart Grids/Green Communications (M6)</b>
		<b>Venue: Conference Room 1</b>	<b>Venue: Conference Room 2</b>
		<b>Chair: Pierre Degauque – Lille 1 University, France</b>	<b>Chair: Francisco Cañete – University of Malaga, Spain</b>
<b>14:00 – 15:20</b>	14:00	<b>Measurement Based 3D-Simulation Models for Elements of Power Line Communications Network</b> R. Vuohtoniemi, T. Ronkainen, J.P. Mäkelä, J. Linatti	<b>H-Bridge Inverters as Part of the Communication Channel for Deploying Power Line Communications Over Solar Photovoltaic Energy Systems</b> A.R. Ndjiongue, M. Della Ramin, A.J. Snyders, H.C. Ferreira
	14:20	<b>The Characterization of Hybrid PLC-Wireless Channels: A Preliminary Analysis</b> T.R. Oliveira, C.A.G. Marques, M.S. Pereira, S.L. Netto, M.V. Ribeiro	<b>Low Voltage Feeder Identification for Smart Grids with Standard Narrowband PLC Smart Meters</b> L. Marrón, X. Osorio, A. Llano, A. Arzuaga, A. Sendin
	14:40	<b>Spectrum Analyzer Based Measurement and Detection of MW/SW Broadcast Radios on Power Lines for Cognitive PLC</b> Y. Lu, W. Liu	<b>Deployment of Power Line Communication by European Utilities in Advanced Metering Infrastructure</b> A. Haidine, A. Tabone, J. Müller
	15:00	<b>Preliminary Analysis of Additive Noise on Outdoor and Low Voltage Electric Power Grid in Brazil</b> F.J.A. Andrade, C.A.G. Marques, T.R. Oliveira, F.P.V. Campos, E.J. de Oliveira, M.V. Ribeiro	<b>Modelling and Analysis of a Power Line Communication Infrastructure for Wind Energy Conversion Systems</b> E. Kabalci, Y. Kabalci
<b>Short Break: 15:20 – 15:30</b>			
<b>15:30-16:10</b>	<b>Panel Session</b>	PLC in Developing Countries	
<b>Coffee Break: 16:10 – 16:30</b>			
		<b>Session 7: Recent Results (RR)</b>	
		<b>Venue: Conference Room 2</b>	
		<b>Chair: Theo Swart – University of Johannesburg, South Africa</b>	
<b>16:30 – 17:10</b>	16:30	<b>Markov Model of In-Vehicle Power Line as Communication Medium</b> M. Wilson, H.C. Ferreira and R. Heymann	
	16:40	<b>Hardware Implementation of Frequency Mappings for Power Line Communications</b> T. Lukusa, K. Ouahada, R. Ndjiongue and H.C. Ferreira	
	16:50	<b>Topology Estimation Using Power Line Communications</b> L. Lampe and M.O. Ahmed	
	17:00	<b>A Network Simulator-3 Implementation for Simulating Power Line Communication Networks</b> F. Aalamifar, A. Schlögl, D. Harris and L. Lampe	

## Tuesday 26 March 2013

		<b>Session 8: Protocols 2 (T1)</b>	<b>Session 9: Narrowband 1 (T2)</b>
		<b>Venue: Conference Room 1</b>	<b>Venue: Conference Room 2</b>
		<b>Chair: Driton Statovci – FTW Center, Austria</b>	<b>Chair: Han Vinck – University Duisburg-Essen, Germany</b>
<b>09:40 – 11:00</b>	09:40	<b>Enhanced 6LoWPAN Ad Hoc Routing for G3-PLC</b> K. Razazian, A. Niktash, V. Loginov, J. Yazdani	<b>N-PE Transmission System for Narrow-Band PLC and Its Channel Properties</b> I.S. Areni, S. Tsuzuki, Y. Yoshizawa, Y. Yamada
	10:00	<b>High Speed Multimedia and Smart Energy PLC Applications Based on Adaptations of HomePlug AV</b> H. Latchman, S. Katar, L. Yonge, A. Amarsingh	<b>A Power Optimised Narrowband Power-line Communication System</b> Y. Sun, G.A.J. Amaratunga
	10:20	<b>Experimental and Field Trial Results of Enhanced Routing Based on LOAD for G3-PLC</b> K. Razazian, A. Niktash, V. Loginov, J. LeClare, T. Lys, C. Lavenu	<b>Modeling of In-House CENELEC A-Band PLC Channel Using Fritchman Model and Baum-Welch Algorithm</b> A.D. Familua, L. Cheng
	10:40	<b>MAC Enhancements for G3-PLC Home Networks</b> L. Di Bert, S. D'Alessandro, A.M. Tonello	<b>Framework to Establish a Simplex Communication System Over a Power Line Using Load Signatures</b> P.A. Kamjom, A.R. Ndjiongue, R. Heymann, H.C. Ferreira
<b>Coffee Break: 11:00 – 11:20</b>			
		<b>Session 10: Signal Processing 2 (T3)</b>	<b>Session 11: EMC/Noise (T4)</b>
		<b>Venue: Conference Room 1</b>	<b>Venue: Conference Room 2</b>
		<b>Chair: Andrea Tonello – University of Udine, Italy</b>	<b>Chair: Petrus Janse van Rensburg – Walter Sisulu University, South Africa</b>
<b>11:20 – 12:40</b>	11:20	<b>A Sounding Method Based on OFDM Modulation for PLC Channel Measurement</b> T.R. Oliveira, W.A. Finamore, M.V. Ribeiro	<b>Effects of LED Lamps on the Power-line Communications Channel</b> A.S. de Beer, A. Emleh, H.C. Ferreira, A.J.H. Vinck
	11:40	<b>Non-Intrusive Power Line Quality Monitoring Based on Power Line Communications</b> F. Yang, W. Ding, J. Song	<b>Electromagnetic Immunity Analysis of a New Interface Device with Power Line Communication for Smart Grid and Energy Storage Applications</b> A. Cataliotti, D. Di Cara, G. Marsala, A. Ragusa, G. Tinè
	12:00	<b>Joint Iterative Channel Estimation and Guard Interval Selection for Adaptive Powerline Communication Systems</b> H. Gacanic	<b>The Extrapolation Factor for PLC Radiation Measurements in the 150-500 kHz Frequency Range</b> M. Wächer, M. Koch, C. Schwing, H. Hirsch
	12:20	<b>Joint Channel and Impulsive Noise Estimation for OFDM Based Power Line Communication Systems Using Compressed Sensing</b> A. Mehboob, L. Zhang, J. Khangosstar, K. Suwunnapak	<b>The Impact of the CFL Lamps on the Power-Line Communications Channel</b> A. Emleh, A.S. de Beer, H.C. Ferreira, A.J.H. Vinck

Lunch: 12:40 – 14:00		
	<b>Session 12: Coding/Modulation (T5)</b>	<b>Session 13: Narrowband Interference (T6)</b>
	<b>Venue: Conference Room 1</b>	<b>Venue: Conference Room 2</b>
	<b>Chair: Makoto Itami – Tokyo University of Science, Japan</b>	<b>Chair: Lutz Lampe – University of British Columbia, Canada</b>
<b>14:00 – 15:20</b>	<b>14:00</b> <b>Robust Turbo Decoding in Impulse Noise Channels</b> D.-F. Tseng, T.-R. Tsai, Y.S. Han	<b>OFDM Preamble Design for Synchronization Under Narrowband Interference</b> S. Liu, F. Yang, J. Song, F. Ren, J. Li
	<b>14:20</b> <b>Short LDPC Codes for NB-PLC Channel with a Differential Evolution Construction Method</b> N. Andreadou, A.M. Tonello	<b>Interleaving and Nulling to Combat Narrow-band Interference in PLC Standard Technologies PLC G3 and PRIME</b> T. Shongwe, A.J.H. Vinck
	<b>14:40</b> <b>Adaptive Rateless Permutation Coding Scheme for OFDM-based PLC</b> L. Cheng, T.G. Swart, H.C. Ferreira	<b>Comparison of Different Digital Front End Structures At the OFDM Receiver</b> G. Hongjian, G. Bumiller
	<b>15:00</b> <b>Cyclic Block FMT Modulation for Broadband Power Line Communications</b> A.M. Tonello, M. Girotto	<b>Narrow-band Interference Model for OFDM Systems for Powerline Communications</b> T. Shongwe, V.N. Papilaya, A.J.H. Vinck
Short Break: 15:20 – 15:30		
<b>15:30 – 16:10</b>	<b>Panel Session</b>	<b>PLC in Smart Grids</b>
Coffee Break: 16:10 – 16:30		
<b>16:30 – 17:30</b>	<b>Workshop</b>	<b>Devolo AG, Germany</b>

# Wednesday 27 March 2013

		<b>Session 14: Applications (W1)</b>	<b>Session 15: Narrowband 2 (W2)</b>
		<b>Venue: Conference Room 1</b>	<b>Venue: Conference Room 2</b>
		<b>Chair: Anil Mengi – Devolo AG, Germany</b>	<b>Chair: Khmaies Ouahada – University of Johannesburg, South Africa</b>
<b>09:40 – 11:00</b>	09:40	<b>Physical Layer Security in PLC Networks: Achievable Secrecy Rate and Channel Effects</b> A. Pittolo, A.M. Tonello	<b>Narrow Band Power Line Channel Characteristics for Low Voltage Access Network in China</b> G. Chu, J. Li, W. Liu
	10:00	<b>Coexistence Analysis of Impedance Modulating Transmitters</b> G. Hallak, G. Bumiller	<b>On the Characterization of the Indoor Low-Voltage PLC Channel At Frequencies Up to 500 kHz</b> H. Gassara, F. Rouissi, A. Ghazel
	10:20	<b>Real Problems Solving in PRIME Networks by Means of Simulation</b> A. Sanz, P.J. Piñero, S. Miguel, J.I. Garcia	<b>Fast Characterization Method and Error Sequence Analysis for Narrowband Indoor Powerline Channel</b> J. Bilbao, A. Calvo, I. Armendariz
	10:40	<b>Integration of Indoor Visible Light and Power Line Communication Systems</b> H. Ma, L. Lampe, S. Hranilovic	<b>Cyclic Spectral Analysis of Power Line Noise in the 3-200 kHz Band</b> K.F. Nieman, J. Lin, M. Nassar, K. Waheed, B.L. Evans
<b>Coffee Break: 11:00 – 11:20</b>			
		<b>Session 16: Broadband Channels (W3)</b>	<b>Session 17: Coupling (W4)</b>
		<b>Venue: Conference Room 1</b>	<b>Venue: Conference Room 2</b>
		<b>Chair: Pierre Siohan – France Telecom-Orange, France</b>	<b>Chair: Shinji Tsuzuki – Ehime University, Japan</b>
<b>11:20 – 12:20</b>	11:20	<b>A PLC Broadband Channel Simulator for Indoor Communications</b> G. Marrocco, D. Statovci, S. Trautmann	<b>A Compact Economical PLC Band-Pass Coupler with Impedance Matching</b> M.P. Sibanda, P.A. Janse van Rensburg, H.C. Ferreira
	11:40	<b>A Binary Tree Network Topology for Statistical and Physical PLC Channel Modeling</b> C. Delestre, G. Ndo, F. Labeau	<b>A Coupling Strategy with Automatic Time Diversity to Counter Rectifier Impulsive Noise</b> A.J. Snyders, H.C. Ferreira, P.A. Janse van Rensburg
	12:00	<b>On PLC Channel Models: An OFDM-based Comparison</b> J.A. Cortés, F.J. Cañete, L. Díez, L.M. Torres	<b>Industrial Powerline Communication for Machine-tools and Industrial Robots</b> J. Lopes, K.-H. Wurst, A. Verl