

IEEE Seminar and African Winter School 2015 Programme

	Sunday, 16 August	Monday, 17 August	Tuesday, 18 August
9:30		Welcoming <i>Hendrik C. Ferreira</i> (Head of the Centre for Telecommunications, UJ) <i>Saurabh Sinha</i> (IEEE Vice-President: Educational Activities & Board of Director)	
10:00		An Overview of Future Directions in Information Theory Research <i>Jeffrey G. Andrews</i>	Combining the Burrows-Wheeler Transform and the Context-Tree Weighting Algorithm <i>Frans M. J. Willems</i>
11:00		Tea and Coffee Break	
11:30		Coding and Combinatorial Optimization <i>Tadashi Wadayama</i>	Are there Fundamental Limits to Wireless Network Densification? <i>Jeffrey G. Andrews</i>
12:30		Lunch	
14:00		Benefits of Compute-and-Forward from Throughput, Energy, and Security Perspectives <i>Jos H. Weber</i>	Removing the Self-imposed Fixed-length Constraint: Variable-length Constrained Sequence Codes <i>Ivan Fair</i>
14:45		Short Break	
15:00		Winter School Presentations <i>Session 1</i>	Winter School Presentations <i>Session 3</i>
16:15		Tea and Coffee Break	
16:45	Registration	Winter School Presentations <i>Session 2</i>	Winter School Presentations <i>Session 4</i>
18:00	Welcome Cocktail	End	

	Wednesday, 19 August	Thursday, 20 August	Friday, 21 August
8:30			
10:00	Excursion: Game Drive	Lattice Index Coding: An Efficient ARQ Scheme for Wireless Broadcasting <i>Emanuele Viterbo</i>	Efficient Identification Coding Schemes for Multiple Objects <i>Hirosuke Yamamoto</i>
11:00		Tea and Coffee Break	
11:30		Exploring New Coding Theories for Data Storage: Internal-Redundancy Processing and Nonvolatile Memories <i>Anxiao Jiang</i>	Spectrum Sharing based Future Wireless Networks using Cognitive Radio & Spectrum Databases: An Information Theoretic Approach <i>Fisseha Mekuria</i>
12:30	Lunch		
14:00	On Codes Achieving Zero Error Capacity in Limited Magnitude Error Channels <i>Bella Bose</i>	A Review on the Deeply-integrated System of Powerline Communications and Visible Light Communications <i>Jian Song</i>	
14:45	Short Break		
15:00	Relative Generalized Hamming Weight and Its Application on Storage <i>Yuan Luo</i>	On Linear Codes and Elementary Symmetric Polynomials <i>Luca Tallini</i>	
15:45	Tea and Coffee Break		
16:15	Winter School Presentations <i>Session 5</i>	Winter School Presentations <i>Session 6</i>	
17:30	End		

	Seminar on Future Directions
	Winter School Tutorials
	Winter School Presentations (see overleaf for details)

Winter School Session 1	Winter School Session 2	Winter School Session 3
An Efficient Sum-Product Decoding Algorithm for Quasi-Cyclic LDPC Codes <i>Y. Genga and D. J. J. Versfeld</i>	Flower Pollination Algorithm Applied to Traveling Salesman Problem <i>R. Strange and L. Cheng</i>	A Pricing Policy to Mitigate Interference Management in Femtocell Networks <i>O. A. Akinlabi, B. S. Paul, M. Joseph and H. C. Ferreira</i>
Low-Density Parity-Check Codes and Cell-to-Cell Interference Mitigation in MLC NAND Flash Memory <i>M. K. Dieudonné, T. G. Swart and H. C. Ferreira</i>	Comparative Investigation into the Performance of Heuristic Algorithms in the Solution of Single Machine Scheduling Problems <i>N. Zlobinsky</i>	Optimal Energy Consumption by Smart Residential Consumers <i>O. M. Longe, K. Ouahada, S. Rimer, A. N. Harutyunyan and H. C. Ferreira</i>
Asymmetric Error Correcting Codes with Optical Orthogonal Codes <i>S. Nlend, T. G. Swart and H. C. Ferreira</i>	A Stochastically Resonant Ontologically Based Cognitive Radio for TV White Space Communications <i>S. Jayram, K. Ouahada, S. Rimer and F. Mekuria</i>	An Energy Efficient Reactive Jamming Technique for GSM Systems <i>G. Timm and D. J. J. Versfeld</i>
Spectral Shaping Codes with Error Correction Capability <i>D. F. Musarurwa, K. Ouahada and H. C. Ferreira</i>	Measuring a Wave Propagation over a Metal Plate and Normalising by Transmission in Free Space <i>M. Nkosi and A. Lysko</i>	Wireless Optical Communication from LEDs to a Smartphone Camera for a Residential Energy Efficient Audit Tool <i>I.T. Mushanguri and R. Heymann</i>
Narrow-Band Interference Signal Detection with Spectral Shaping Technique <i>M. Trollip and K. Ouahada</i>	Network Coding Through a VANET Using Location Based Addressing <i>A. Hudson and L. Cheng</i>	Using Street Lights for Transmitting, Broadcasting and Controlling Communication Signals Over Low Voltage PLC Network <i>D. E. D. Farouk, A. Emleh and H. C. Ferreira</i>

Winter School Session 4	Winter School Session 5	Winter School Session 6
Software Defined Radio <i>K. Beouche and D. J. J. Verfeld</i>	Construction of Non-binary Constant Weight Codes based on Knuth's Algorithm <i>E. N. Mambou, T. G. Swart and H. C. Ferreira</i>	FSK-Based Modulation Scheme for VLC and PLC Communication Systems <i>G. M. Mougoue Yamga, K. Ouahada and A. R. Ndjiongue</i>
Fundamental Aspects of Common Mode Conversion in SIMO PLC Networks <i>A. S. de Beer and A. Sheri</i>	On the Applications of DC-balanced Codes in VLC Technology <i>A. R. Ndjiongue, E. N. Mambou, T. G. Swart and H. C. Ferreira</i>	Design, Implementation and Modeling of an Integrated In-Home PLC-VLC OFDM System using USRP <i>A. D. Familua and L. Cheng</i>
The Effect of the Light Sources on the Transmission Lines of the Low Voltage Network <i>A. Emleh and H. C. Ferreira</i>	A Simplified Burst Error Correcting Scheme for Narrowband Power Line Communication Channel <i>Y. F. Rivard and L. Cheng</i>	On the Applications of TCM in Hybrid RF-VLC Systems <i>A. R. Ndjiongue and H. C. Ferreira</i>
Simulation Study on the Performance of OFDM in Different Environments <i>M. Trollip and K. Ouahada</i>	Correcting Bursts of Insertion and Deletion Errors <i>D. Smith, T. G. Swart and H. C. Ferreira</i>	OFDM-Based VLC-PLC Technology Enabling the Smart Grid <i>N. Stephane Martin, K. Ouahada, A. R. Ndjiongue and H. C. Ferreira</i>
	Correcting Synchronization Errors Using Concatenated Permutation Codes <i>R. Heymann, J. H. Weber, T. G. Swart and H. C. Ferreira</i>	