



Nordic Radio Symposium 2004 /
Finnish Wireless Communications Workshop 2004

PROGRAMME AT A GLANCE

Monday 16 August			
	<i>Lecture Room PR102</i>	<i>Lecture Room PR101</i>	<i>Lecture Room SA102</i>
11.00	Registration opens		
12.10-13.10	Lunch		
13.10-14.50	TUTORIAL 1 Ultra Wideband Dr. Ian Oppermann	TUTORIAL 2 Multiple-input Multiple-output (MIMO) Communications with Applications to WCDMA and Multicarrier Systems Dr. Juha Ylitalo and Prof. Markku Juntti	TUTORIAL 3 Wireless Ad Hoc and Sensor Networks Prof. Carlos Pomalaza-Ráez
14.50-15.20	Coffee		
15.20-17.00	TUTORIAL 1 Ultra Wideband Dr. Ian Oppermann	TUTORIAL 2 Multiple-input Multiple-output (MIMO) Communications with Applications to WCDMA and Multicarrier Systems Dr. Juha Ylitalo and Prof. Markku Juntti	TUTORIAL 3 Wireless Ad Hoc and Sensor Networks Prof. Carlos Pomalaza-Ráez

Tuesday 17 August		<i>Lecture Room L5</i>	<i>Lecture Room L6</i>
08.30-10.10		PLENARY SESSION 1	
08.30-08.40	Dr. Ian Oppermann OPENING		
08.40-09.25	Prof. Joachim Hagenauer THE TURBO PRINCIPLE IN WIRELESS COMMUNICATIONS		
09.25-10.10	Prof. Bernard H. Fleury RECENT DEVELOPMENTS IN RADIO CHANNEL MEASUREMENT AND MODELLING Authors: Bernard H. Fleury and Xuefeng Yin		
10.10-10.40		Coffee	
10.40-12.20		SESSION 1 - COMMUNICATION THEORY	SESSION 2 - AD-HOC & SENSOR NETWORKS
10.40-11.00	ON THE DISTRIBUTION OF CAPACITY IN RAYLEIGH FADING MIMO CHANNELS J. Salo, P. Suvikunnas, H. El-Sallabi and P. Vainikainen		RADIO RESOURCE ALLOCATION IN HETEROGENEOUS WIRELESS NETWORKS USING COOPERATIVE GAMES I. M. Suliman, C. Pomalaza-Ráez, J. Lehtomäki and I. Oppermann
11.00-11.20	NEW TIGHT UPPER BOUNDS ON THE MIMO CHANNEL CAPACITY B.O. Hogstad and M. Pätzold		COMPARISON OF REACTIVE ROUTING AND FLOODING IN WIRELESS SENSOR NETWORKS A. Saarinen and C. Pomalaza-Ráez
11.20-11.40	SPECTRAL EFFICIENCY BOUNDS FOR ADAPTIVE CODED MODULATION WITH OUTAGE PROBABILITY CONSTRAINTS AND IMPERFECT CHANNEL PREDICTION O. Jettlund, G.E. Øien, K.J. Hole and H. Holm		CODING FOR ENERGY EFFICIENT MULTIHOP WIRELESS SENSOR NETWORKS H. Karvonen and C. Pomalaza-Ráez
11.40-12.00	NOISE DEPENDANT CONSTELLATIONS K.M. Gjertsen, B. Risløw, D. Røyrvik and H. Coward		AN OVERVIEW OF LOCATION TECHNIQUES FOR WIRELESS SENSOR AD-HOC NETWORKS J-P. Montillet and I. Oppermann
12.00-12.20	ERROR RATE OF LMMSE RECEIVER IN MULTIPATH NAKAGAMI- <i>m</i> FADING CHANNELS K. Yu and I. Oppermann		EFFECTS OF SENSOR NETWORK UNCERTAINTIES IN EMITTER LOCATION J. Saloranta, H. Saarnisaari and T. Bräysy
12.20-13.20		Lunch	
13.20-15.00		SESSION 3 - CODING AND DECODING	SESSION 4 - CHANNEL MEASUREMENT AND MODELLING
13.20-13.40	COMPARISON OF INCREMENTAL REDUNDANCY AND ADAPTIVE CODING SCHEMES USING PUNCTURED TURBO CODES J. Skjördal and P. Orten		A GENERAL CONCEPT FOR THE DESIGN OF MIMO CHANNEL SIMULATORS M. Pätzold and B.O. Hogstad
13.40-14.00	ADAPTIVE TRELLIS-CODED MODULATION WITH IMPERFECT CHANNEL STATE INFORMATION AT THE RECEIVER AND TRANSMITTER D.V. Duong and G.E. Øien		A NOVEL GENERATIVE MODEL FOR THE CHARACTERIZATION OF DIGITAL WIRELESS CHANNELS WITH SOFT DECISION OUTPUTS C.-X. Wang; W. Xu, and M. Pätzold
14.00-14.20	ADAPTIVE SPACE-TIME MODULATION FOR 4 x 4 MIMO O. Tirkkonen, M. Kokkonen, K. Kalliojärvi, A. Hottinen and J. Bonnet		MODELING AND SIMULATION OF SPATIAL-TEMPORAL CHANNELS FOR CIRCULAR ANTENNA ARRAY SYSTEMS Q. Yao and M. Pätzold
14.20-14.40	PERFORMANCE STUDY OF THE SPHERE DETECTION WITH LINEAR DISPERSION CODING P. Silvola, D. Tujkovic and M. Juntti		SUB-BAND ANALYSIS IN UWB RADIO CHANNEL MODELING L. Henttilä, V. Hovinen and M. Hämäläinen
14.40-15.00	QUANTIZATION OF CHANNEL QUALITY INDICATOR IN MAXIMUM SNR SCHEDULING J. Hämäläinen and R. Wichman		OUTDOOR ULTRA WIDEBAND PROPAGATION CHANNEL MODELING AT VHF/UHF BAND N. Laine, M. Hämäläinen, L. Henttilä, J. Iinatti, M. Nenonen and S. Karhu

Tuesday 17 August		
	<i>Lecture Room L5</i>	<i>Lecture Room L6</i>
15.00-15.30	Coffee	
15.30-16.50	SESSION 5 - DETECTION TECHNIQUES	SESSION 6 - TRANSCIVER ARCHITECTURES
15.30-15.50	LOW-COMPLEXITY ROBUST MINIMAX POWER DETECTION OF A WEAK SIGNAL IN NOISE WITH A BOUNDED VARIANCE G. Shevlyakov and K. Kim	A NEW POLAR TRANSMITTER FOR MULTIMODE WIRELESS APPLICATIONS Y. Huang and T. Larsen
15.50-16.10	QUANTIZATION AND NOISE LEVEL ESTIMATION EFFECTS ON THE ENERGY DETECTION S. Koivu, H. Saarnisaari and M. Juntti	ADVANCED DSP FOR COMPENSATION OF NONLINEAR DISTORTION IN WIDEBAND DIRECT-CONVERSION RECEIVERS A. Shahed hagh ghadam, M. Valkama and M. Renfors
16.10-16.30	THE EFFECTS OF QUANTISATION ON THE PERFORMANCE OF A NON-COHERENT CODE MATCHED FILTER V. Tapio	BASEBAND SIGNAL PROCESSING FOR A NARROWBAND RADIO MODEM L. Anttila and M. Renfors
16.30-16.50	PERFORMANCE OF COHERENT IMPULSE RADIO AND MULTIBAND-OFDM ON IEEE UWB CHANNELS M.-O. Wessman and A. Svensson	ADVANCED HIGH EFFICIENCY MULTI-CARRIER TRANSMITTER FOR UMTS BASE STATIONS A. Pascht, T. Bitzer, T. Bohn, G. Jacob, P. Jaenecke, J. Schaepperle, G. Schwoerer and J. Strauss
16.50-17.30	PCC POSTER SESSION IN ROOM SA102	
	Poster 1 COOPERATIVE AND SELFISH BEHAVIOR IN UNLICENSED SPECTRUM USING THE CSMA/CA PROTOCOL Olav Queseth	Poster 6 A RATE-ADAPTIVE BANDWIDTH RESERVATION SCHEME FOR CELLULAR NETWORKS R. Zander and J.M. Karlsson
	Poster 2 PACKET LENGTH INFLUENCE ON THE THROUGHPUT OF INTERFERING BLUETOOTH NETWORKS A. Stranne, O. Edfors and B.-A. Molin	Poster 7 ANALYSIS OF 3G AND WLANS IN HIERARCHICAL WIRELESS SYSTEMS H. Persson and J.M. Karlsson
	Poster 3 AN FPGA IMPLEMENTATION OF A MATRIX INVERSION ARCHITECTURE FOR MULTIPLE ANTENNA ALGORITHMS F. Edman and V. Owall	Poster 8 ON THE ERROR OF KRONECKER STRUCTURE BASED MIMO CHANNEL MODEL K. Yu, M. Bengtsson and B. Ottersten
	Poster 4 MULTIPLE-ANTENNA CHANNEL ESTIMATION USING DETECTED SYMBOL INFORMATION M. Tapio, P. Bohlin and M. Viberg	Poster 9 COST BASED RESOURCE MANAGEMENT IN HYBRID CELLULAR-BROADCASTING NETWORKS A. Bria
	Poster 5 MEAN SNR PERFORMANCE OF MULTUSER DIVERSITY WITH RAKE RECEPTION AND FEEDBACK DELAY F. Florén, M.Z. Win and O. Edfors	Poster 10 NEW SCHEMES FOR TRELLIS SOURCE CODING AT VARIOUS RATES T. Eriksson, M. Novak and J.B. Anderson
17.30	Bus transportation from the university to symposium hotels	
19.00-23.00	Banquet in Rauhala City Villa (Address: Mannenkatu 1)	

Wednesday 18 August		<i>Lecture Room L5</i>	<i>Lecture Room L6</i>
08.30-10.00	PLENARY SESSION 2		
08.30-09.15	Prof. Hans van den Berg FLOW-LEVEL PERFORMANCE MODELLING FOR ELASTIC DATA TRAFFIC IN 3G+ NETWORKS		
09.15-10.00	Dr. Mikko A. Uusitalo WWRF - THE WIN-WIN WAY TOWARDS B3G		
10.00-10.30	Coffee		
10.30-12.10	SESSION 7 - ANTENNA CONCEPTS FOR WIRELESS SYSTEMS	SESSION 8 - WIRELESS NETWORKS AND APPLICATIONS	
10.30-10.50	COMPARISON OF MIMO ANTENNAS: PERFORMANCE MEASURES AND EVALUATION RESULTS OF TWO 2X2 ANTENNA CONFIGURATIONS P. Suvikunna, J. Salo, J. Kivinen and P. Vainikainen	SERVICE AND BUSINESS MODEL FOR MOBILE APPLICATION SUPERNETWORKING T. Koskela, M. Ylianttila, K. Kuusipalo, J. Sun	
10.50-11.10	PERFORMANCE EVALUATION OF MULTI-ANTENNA CODED DOWNLINK MC-CDMA IN A CELLULAR SYSTEM J. Leinonen, M. Vehkaperä, Z. Li and M. Juntti	STATE-OF-THE-ART SIP FOR MOBILE APPLICATION SUPERNETWORKING D. Howie, M. Ylianttila, E. Harjula and J. Sauvola	
11.10-11.30	A SMART ANTENNA CONCEPT FOR 4G AND TRANSCIEVER COST P. Zetterberg	EMPIRICAL ASPECTS ON IMPLEMENTING APPLICATION SUPERNETWORKING J. Ala-Kurikka, M. Ylianttila, E. Harjula and O. Kassinen	
11.30-11.50	JOINT IMPACT OF THE MEAN EFFECTIVE GAIN AND BASE STATION SMART ANTENNAS ON WCDMA-FDD SYSTEMS PERFORMANCE A. Alayon Glazunov	HIGH CAPACITY STRATEGIES FOR GSM/EDGE - FREQUENCY HOPPING AND EDGE PACKET DATA T. Jönsson, P. De Bruin, S. Craig and J. Axnäs	
11.50-12.10	THE EFFECT OF BASE STATION MAST HEIGHT ON BROADBAND FIXED WIRELESS NETWORK DESIGN AND PROFITABILITY D. Ryan	ADAPTIVE ANTENNA SYSTEMS IN EDGE NETWORKS - SOLUTIONS TO PACKET DATA ISSUES M. Alm and S. Craig	
12.10-13.10	Lunch		
13.10-14.50	SESSION 9 - ESTIMATION	SESSION 10 - WCDMA ENHANCEMENTS	
13.10-13.30	ON THE CHOICE OF THE PARAMETERS FOR FAST HYBRID-SEARCH ACQUISITION ARCHITECTURES OF GPS AND GALILEO SIGNALS E. Pajala, E-S. Lohan and M. Renfors	WCDMA UPLINK ENHANCEMENTS FOR HIGH SPEED DATA ACCESS J. Peisa, J. Torsner, S. Parkvall, M. Samuelsson, E. Englund, P. Malm, K-E. Sunell, M. Edvardsson, C. Edholm and K. Wang Helmersson	
13.30-13.50	OVERSAMPLING LIMITS FOR BINARY OFFSET CARRIER MODULATION FOR THE ACQUISITION OF GALILEO SIGNALS A. Burian, E-S. Lohan and M. Renfors	WCDMA UPLINK INTERFERENCE CANCELLATION PERFORMANCE - FIELD MEASUREMENTS AND SYSTEM SIMULATIONS B. Hagerman, F. Gunaarsson, H. Murai, M. Tadenuma and J. Karlsson	
13.50-14.10	CHANNEL ESTIMATION IN SPACE-FREQUENCY TURBO CODED OFDM SYSTEM H. Miao, M. Juntti and D. Tujkovic	COMPARISON OF BEAM-FORMING AND DIVERSITY TECHNIQUES IN TERMS OF UTRA FDD UPLINK CAPACITY E. Tirola and J. Ylitalo	
14.10-14.30	LEAST SQUARE CHANNEL ESTIMATION USING SPECIAL TRAINING SEQUENCES FOR MIMO-OFDM SYSTEMS IN THE PRESENCE OF INTERSYMBOL INTERFERENCE V.D Nguyen and M. Pätzold	PERFORMANCE OF SPACE TIME TRANSMIT DIVERSITY IN WCDMA M. Ingale	
14.30-14.50	LOCALIZATION OF MULTIPLE NARROWBAND SIGNALS BASED ON THE FCME ALGORITHM J. Vartiainen, J. Lehtomaki, S. Aromaa and H. Saarnisaari	EFFECTS OF OTHER SECTOR INTERFERENCE VARIATION ON DETECTOR PERFORMANCE, LINK ADAPTATION AND SCHEDULING IN HSDPA L.T. Berger, T.E. Kolding, P.E. Mogensen, F. Frederiksen and K. Pedersen	

Wednesday 18 August		
	<i>Lecture Room L5</i>	<i>Lecture Room L6</i>
14.50-15.20	Coffee	
15.20-16.40	SESSION 11 - INTERFERENCE SUPPRESSION	SESSION 12 - TRANSCIEVER TECHNIQUES
15.20-15.40	PERFORMANCE OF FORWARD CONSECUTIVE MEAN EXCISION INTERFERENCE SUPPRESSOR IN DIRECT SEQUENCE SYSTEMS J. Vartiainen, J. Lehtomäki and H. Saarnisaari	ANALYSIS OF DISTORTION IN A MEMORYLESS BANDPASS NONLINEARITY A. Behravan
15.40-16.00	Interference Resistant Receivers for MIMO HSDPA K. Kiiskilä, K. Hooli, J. Ylioinas and M. Juntti	POWER AMPLIFIER MODELING FOR VARYING ENVELOPE MODULATION T. Torben, O.K. Jensen and J.H. Mikkelsen
16.00-16.20	An Efficient and Effective Pilot-Based Space-Time Adaptive Algorithm for Mobile Communication Systems R. Landqvist and M. Abbas	PERFORMANCE OF MC-CDMA IN THE PRESENCE OF THE POWER AMPLIFIER AND AMPLITUDE LIMITING A. Hekkala, V. Tapio and R. Vuontoniemi
16.20-16.40	AN EFFICIENT HIGH PERFORMANCE EQUALIZATION METHOD FOR REAL-VALUED MODULATIONS C. Vilella Parra	DEMONSTRATION OF A TWO-STAGE PRE-DISTORTER FOR AMPLIFIER LINEARISATION N. Safari, K. Rimstad and T. Roste