

**6<sup>th</sup> International Workshop on  
Multi-Carrier Spread-Spectrum MC-SS 2007**

**Tentative Program**

**May 07-09, 2007, Herrsching, Germany**

**Monday, May 07**

|   |  |
|---|--|
| 9:00-13:30: Registration  |  |
| 9:00-12:00: Tutorial <i>on MC-CDMA</i> (Room A)                             |  |
| 13:30-15:00: Session 1, Plenary, <i>General Issues-I</i> (Room A+B)         |  |
| 15:30-17:10: Session 2, Parallel<br><i>Channel Estimation-I</i><br>(Room A) | 15:30-17:10: Session 3, Parallel<br><i>Multiple Antennas</i><br>(Room B) |

**Tuesday, May 08**

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| 9:00-10:40: Session 4, Parallel<br><i>Channel Estimation-II</i><br>(Room A)                        | 9:00-10:40: Session 5, Parallel<br><i>Adaptive Transmission</i><br>(Room B)       |
| 11:10-12:30: Session 6, Plenary, <i>General Issues-II</i> (Room A+B)                               |   |
| 14:00-15:20: Session 7, Parallel<br><i>Interleave Division Multiple<br/>Access (IDMA)</i> (Room A) | 14:00-15:20: Session 8, Parallel<br><i>Spectrum and Interference</i><br>(Room B)  |
| 15:45-17:00: Session 9, Parallel<br><i>Synchronization and Tracking</i><br>(Room A)                | 15:45-17:00: Session 10, Parallel<br><i>Multi-Cell and Multi-Link</i><br>(Room B) |

**Wednesday, May 09**

9:00-10:40: Session 11, Parallel  
*Channel Estimation-III*  
(Room A)

9:00-10:40: Session 12, Parallel  
*Data Transmission*  
(Room B)

11:10-13:15: Session 13, Plenary, *General Issues-III* (Room A+B)

## First Day, Monday, May 07, 2007

**9:00 – 13:30 Registration**

**9:00 – 12:00 Tutorial on MC-CDMA**

**13:30 – 15:00 Session 1 (Plenary)**

*Title:* General Issues-I

*Chairperson:* Armin Dammann, German Aerospace Center (DLR)

- 1) **Opening Remarks**
- 2) **OFDM towards Broadband Wireless Access**  
*Ramjee Prasad (Aalborg University) (invited plenary speech)*
- 3) **Frequency-Domain Equalization for Block CDMA Transmission**  
*F. Adachi, A. Nakajima, K. Takeda, L. Liu, H. Tomeba, K. Fukuda (Tohoku University) (invited paper)*
- 4) **OFDMA in Cellular Mobile Communication Systems and its Real-Time Emulation**  
*Ingo Viering, Eiko Seidel (NOMOR Research)*

**15:00 - 15:30 Coffee Break**

**15:30 – 17:10 Session 2 (Parallel Session)**

*Title:* Channel Estimation-I

*Chairperson:* Peter Hoehner, University of Kiel

- 1) **Combined Time and Frequency Domain OFDM Channel Estimation**  
*M. Bevermeier, R. Haeb-Umbach (University of Paderborn)*
- 2) **Design and Performance Analysis of Low-Complexity Pilot-Aided OFDM Channel Estimators**  
*E. Golovins, N. Ventura (University of Cape Town)*
- 3) **A Study on Channel Estimation for OFDM Systems Using EM Algorithm Based on Multi-Path Doppler Channel Model**  
*A. Waku (Tokyo University of Science),  
M. Fujii (Utsunomiya University),  
M. Itami, K. Itoh (Tokyo University of Science)*
- 4) **Channel Estimation for Block-IFDMA**  
*A. Sohl, T. Frank, A. Klein (Darmstadt University of Technology)*

**15:30 – 17:10 Session 3 (Parallel Session)**

*Title:* Multiple Antennas

*Chairperson:* Fumiyuki Adachi, Tohoku University

- 1) **Performance of Cyclic Delay Diversity in Ricean Channels**  
*A. Dammann, R. Raulefs, S. Plass (German Aerospace Center (DLR))*
- 2) **Downlink Performance of MC-CDMA Systems with Spatial Phase Codes in Fading Channels**  
*S. Kaiser (DoCoMo Euro-Labs)*
- 3) **Doppler-Compensation for OFDM-Transmission by Sectorized Antenna Reception**  
*P. Klenner, K.-D. Kammeyer (University of Bremen)*
- 4) **On the Receive Signal Dynamics in Energy Efficient MIMO OFDM Multi-User Mobile Radio Downlinks**  
*F. Keskin, A. Egelhof (University of Kaiserslautern)*

**Second Day, Tuesday, May 08, 2007**

**9:00 – 10:40 Session 4 (Parallel Session)**

*Title:* Channel Estimation-II

*Chairperson:* Li Ping, City University of Hong Kong

- 1) **Robust Time Domain Channel Estimation for MIMO-OFDMA Downlink System**  
*B. Le Saux, M. Helard, R. Legouable (France Telecom)*
- 2) **Joint Iterative Channel Estimation and Soft-Chip Combining for a MIMO MC-CDMA Antijam System**  
*G. Asadullah, G.L. Stuber (Georgia Institute of Technology)*
- 3) **Pilot Design for MIMO-OFDM with Beamforming**  
*M. Carta (University of Pisa),  
I. Cosovic, G. Auer (DoCoMo Euro-Labs)*
- 4) **Channel Estimation by Exploiting Sublayer Information in OFDM Systems**  
*M. Bevermeier, T. Ebel, R. Haeb-Umbach (University of Paderborn)*

**9:00 – 10:40 Session 5 (Parallel Session)**

*Title:* Adaptive Transmission

*Chairperson:* Witold Krzymien, University of Alberta

- 1) **A New Dynamic Partial Precoding Technique for MC-CDMA Systems Employing PSK Modulation**  
*C. Masouros, E. Alsusa (University of Manchester)*
- 2) **The Influence of Link Adaptation in Multi-User OFDM**  
*S. Pfletschinger (Centre Tecnològic de Telecomunicacions de Catalunya (CTTC))*

- 3) **Adaptive Multi-Carrier Spread-Spectrum with Dynamic Time-Frequency Codes for UWB Applications**  
*A. Stephan, J.-Y. Baudais, J.-F. Helard (Institute of Electronics and Telecommunications of Rennes (IETR))*
- 4) **Radio Resource Allocation in MC-CDMA under QoS Requirements**  
*I. Gutierrez (Ramon Llull University),  
F. Bader (Centre Tecnològic de Telecomunicacions de Catalunya (CTTC)),  
J.L. Pijoan (Ramon Llull University)*

**10:40 - 11:10 Coffee Break**

**11:10 – 12:30 Session 6 (Plenary)**

**Title:** General Issues-II

**Chairperson:** *Khaled Fazel, Ericsson GmbH*

- 1) **Half-duplex relay networks, network coding and (a little bit of) OFDM**  
*Ralf Koetter (Technical University of Munich) (invited plenary speech)*
- 2) **EXIT-Chart Analysis of Iterative Space-Time-Frequency Coded Multi-Carrier Receivers**  
*S. Sand, A. Dammann (German Aerospace Center (DLR))*
- 3) **Interleaver for High Parallelizable Turbo Decoder**  
*L. Boher, J.-B. Dore, M. Helard, C. Gallard (France Telecom)*

**12:30 - 14:00 Lunch Break**

**14:00 – 15:20 Session 7 (Parallel Session)**

**Title:** Interleave Division Multiple Access (IDMA)

**Chairperson:** *Stephan Pfletschinger, Centre Tecnològic de Telecomunicacions de Catalunya (CTTC)*

- 1) **Multi-User Detection Techniques for Potential 3GPP Long Term Evolution (LTE) Schemes**  
*Q. Guo, X. Yuan, L. Ping (City University of Hong Kong) (invited paper)*
- 2) **Analysis and Performance of an Efficient Iterative Detection Strategy for IDMA Systems**  
*P. Weitkemper, K.-D. Kammeyer (University of Bremen)*
- 3) **Joint Navigation & Communication Based on Interleave-Division Multiple Access**  
*P.A. Hoehner, K. Schmeink (University of Kiel)*

**14:00 – 15:20 Session 8 (Parallel Session)**

*Title:* Spectrum and Interference

*Chairperson:* Ralf Koetter, Technical University of Munich

- 1) **Out-of-band Radiation in Multicarrier Systems: A Comparison**  
*L.G. Baltar, D.S. Waldhauser, J.A. Nossek (Munich University of Technology)*
- 2) **Mitigation of Dynamically Changing Narrow-Band Interferers in OFDM Based Overlay Systems**  
*S. Brandes, M. Schnell (German Aerospace Center (DLR))*
- 3) **Cancellation of Digital Narrowband Interference for Multi-Carrier Systems**  
*M. Marey, H. Steendam (University of Ghent)*

**15:20 - 15:45 Coffee Break**

**15:45 – 17:00 Session 9 (Parallel Session)**

*Title:* Synchronization and Tracking

*Chairperson:* Heidi Steendam, University of Ghent

- 1) **Positioning with Generalized Multi-Carrier Communications Signals**  
*C. Mensing, S. Plass, A. Dammann (German Aerospace Center (DLR))*
- 2) **Joint Channel Tracking and Phase Noise Compensation for OFDM in Fast Fading Multipath Channels**  
*R. Corvaja (University of Padova),  
A. Garcia Armada (University Carlos III of Madrid)*
- 3) **Estimation of Sampling Time Misalignments in IFDMA Uplinks**  
*A. Arkhipov, M. Schnell (German Aerospace Center (DLR))*

**15:45 – 17:00 Session 10 (Parallel Session)**

*Title:* Multi-Cell and Multi-Link

*Chairperson:* Josef A. Nossek, Technical University of Munich

- 1) **DOA Estimation for MC-CDMA Uplink Transmissions**  
*A. A. D'Amico, M. Morelli, L. Sanguinetti (University of Pisa)*
- 2) **The Cellular Alamouti Technique**  
*S. Plass, R. Raulefs (German Aerospace Center (DLR))*
- 3) **Iterative Intercell Interference Cancellation for DL MC-CDMA Systems**  
*M. Chacun, M. Helard, R. Legouable (France Telecom)*

**18:15 – 22:00 Social Event on the historical paddle wheel steamer ‘RMS Diessen’; meeting point at the quay in Herrsching (5min walk from the conference venue); Dinner Speech by Joachim Hagenauer**

## Third Day, Wednesday, May 09, 2007

**9:00 – 10:40 Session 11 (Parallel Session)**

*Title:* Channel Estimation-III

*Chairperson:* Gordon L. Stuber, Georgia Institute of Technology

- 1) **Joint Data Detection and Channel Estimation for Uplink MC-CDMA Systems over Frequency Selective Channels**  
*E. Panayirci (Kadir Has University),  
H. Dogan, H.A. Cirpan, (Istanbul University)  
B.H. Fleury (Aalborg University)*
- 2) **On the Performance of MC-CDMA Systems with Partial Equalization in the Presence of Channel Estimation Errors**  
*F. Zabini, B.M. Masini, (University of Bologna)  
A. Conti (University of Ferrara)*
- 3) **Kalman vs  $H_{\infty}$  Algorithms for MC-DS-CDMA Channel Estimation With or Without A Priori AR Modeling**  
*A. Jamoos, J. Grolleau, E. Grivel (University of Bordeaux 1),  
H. Abdel-Nour (Al-Quds University)*
- 4) **Cross-Coupled Rao-Blackwellized Particle and Kalman Filters for the Joint Symbol-Channel Estimation in MC-DS-CDMA Systems**  
*J. Grolleau, A. Giremus, E. Grivel (University of Bordeaux 1)*

**9:00 – 10:40 Session 12 (Parallel Session)**

*Title:* Data Transmission

*Chairperson:* Stephan Sand, German Aerospace Center (DLR)

- 1) **RAKE Reception for Signature-Interleaved DS CDMA in Rayleigh Multipath Channel**  
*A. Dudkov (University of Turku)*
- 2) **Accurate BER of MC-DS-CDMA over Rayleigh Fading Channels**  
*B. Smida (Harvard University),  
L. Hanzo (University of Southampton),  
S. Affes (Université du Québec)*
- 3) **OFDM/OQAM for Spread-Spectrum Transmission**  
*C. Lele, P. Siohan, R. Legouable, M. Bellanger (France Telecom)*
- 4) **A Multi-Carrier Downlink Transmitter for LEO Satellite**  
*R.M. Vitenberg (Wavetone Technologies Ltd.)*

**10:40 - 11:10 Coffee Break**

**11:10 – 13:15 Session 13 (Plenary)**

**Title:** General Issues-III

**Chairperson:** *Stefan Kaiser, DoCoMo Euro-Labs*

- 1) **Different Guard Interval Techniques for OFDM: Performance Comparison**  
*H. Steendam, M. Moeneclaey (University of Ghent) (invited paper)*
- 2) **An Analysis of OFDMA, Precoded OFDMA and SC-FDMA for the Uplink in Cellular Systems**  
*C. Ciochina (Mitsubishi Electric ITE-TCL, Supélec),  
D. Mottier (Mitsubishi Electric ITE-TCL),  
H. Sari (Supélec)  
(invited paper)*
- 3) **Influence of a Cyclic Prefix on the Spectral Power Density of Cyclo-Stationary Random Sequences**  
*M.T. Ivrlac, J.A. Nossek (Technical University of Munich)*
- 4) **Downlink Scheduling for Multiple Antenna Multi-Carrier Systems with Dirty Paper Coding via Genetic Algorithms**  
*R.C. Elliott, W.A. Krzymien (University of Alberta)*
- 5) **Closing Remarks**