

Signal Processing and Applied Mathematics for Electronics and Communications

August 26-28, 2011 — Cluj-Napoca, Romania

Program

August 26

Thursday, August 25,

Technical University of Cluj-Napoca, C. Daicoviciu Street, No 15, Room 476

Pre-workshop
tour: **15:00 – 19:00**, Cluj-Napoca

Registration: **17:00 – 19:00**

Friday, August 26,

Technical University of Cluj-Napoca, C. Daicoviciu Street, No 15, Room 474
"Alexandru Domșa"

Registration: **08:30 – 09:00**

Opening Ceremony: **09:00 – 09:15**

Plenary Talks I:

Chair: Alle-Jan van der Veen - *TU Delft, Delft, The Netherlands*
 09:15 – 10:00
 "Hey! What Is That In Your Pocket? The Mobile Device Future"
 Edward J. Delp - Purdue University, USA
 10:00 – 10:45
 "Semantic Media Retrieval: Combining Content and Knowledge"
 Francesco De Natale - University of Trento, Italy

Coffee break: **10:45 – 11:15**

Plenary Talks II:

Chair: Ioan Nafoarnita - *"Politehnica" University of Timișoara, Romania*
 11:15 – 12:00
 "Spectral Techniques on Finite Non-Abelian Groups for Representation
 of Discrete Signals"
 Radomir S. Stankovic - University of Niš, Serbia
 12:00 – 12:45
 "Full-chip Analog Circuit Simulation in a Multi-Core and Cloud
 Environment"

Andrei Vladimirescu - University of California at Berkeley, USA
Institute Supérieur D'Electronique de Paris, France

Lunch: **12:45 – 14:15**

Session I: **14:15 – 15:55**

Chair: Marius Sirbu - SC. WsComm.SRL, Cluj-Napoca Romania
“Comparison of Positioning Accuracy of Grid and Path Loss-Based Mobile Positioning Methods using Received Signal Strengths”
Elina Laitinen, Jukka Talvitie, Elena-Simona Lohan, Markku Renfors – Tampere University of Technology, Finland
“SVD Algorithms and Quantization Applied to MIMO max- $d_{\min}$ Based Precoder”
Ancuta Moldovan, Tudor Palade – Technical University of Cluj-Napoca, Romania
Ghadir Madi, Baptiste Vrigneau, Rodolphe Vauzelle – University of Poitiers, France
“Quantization Effects on Correlation Losses for Galileo E1 Signal Acquisition and Tracking”
Mohammad Zahidul H. Bhuiyan, Kazi Wali Ullah, Elena Simona Lohan – Tampere University of Technology, Finland
“Joint Ranging and Clock Synchronization for a Satellite Array”
Raj Thilak Rajan – ASTRON, Dwingeloo, The Netherlands
Alle-Jan van der Veen – TU Delft, Delft, The Netherlands
“Investigation of Multipath Detection Algorithms Based on Scatter Plots in Galileo CBOC Signals”
Alexandru Rusu-Casandra, Ion Marghescu – Politehnica University of Bucharest, Romania
Elena-Simona Lohan – Tampere University of Technology, Finland

Coffee break: **15:55 – 16:25**

Session II: **16:25 – 18:05**

Chair: Eugen Lupu, Technical University of Cluj-Napoca, Romania
“Novel Search Method for Structured Code-Matched Interleavers”
Alexandru Georgian Lazar, Nicoleta Roxana Buzatu, Elena Cojocariu, Lucian Trifina - “Gheorghe Asachi” Technical University of Iași, Romania
“Improving the Performance of Turbo Codes for AWGN, RMF and B-RMF Channels”
Alexandru Georgian Lazar, Elena Cojocariu, Nicoleta Roxana Buzatu, Lucian Trifina - “Gheorghe Asachi” Technical University of Iași, Romania
Camelia Lazar - Institute of Computer Science, Iași
“Kalman Filtering Applied to Carrier Recovery of High-Order QAM Signals”

A. Câmpeanu, J. Gal - „Politehnica” University, Timișoara, Romania
“Asymmetric Turbo Codes for LTE Systems with Medium Frame Length”

Elena Cojocariu, Daniela Tarniceriu, Alexandru Georgian Lazar, Lucian Trifina - “Gheorghe Asachi” Technical University of Iași, Romania

“Weighted Log-Spectral Amplitude Estimation with Generalized Gamma Distribution under Speech Presence Probability”

Atanu Saha, Tetsuya Shimamura - Saitama University, Saitama, Japan

Cocktail: **19:00 – 21:00**

August 27

Saturday, August 27,

**Technical University of Cluj-Napoca, C. Daicoviciu Street, No 15, Room 474
"Alexandru Domșa"**

Registration: **08:30 – 09:00**

Session III: **09:00 – 10:40**

Chair: Alexandru Isar, *"Politehnica" University of Timișoara, Romania*
“Combined Partial Transmit Sequence and Companding for PAPR Reduction in OFDM Systems”
Jamal Mountassir, Alexandru Isar - „Politehnica” University of Timișoara, Romania
“PAPR Reduction of OFDM Signals Using Multiple Symbol Representations – Clipping Hybrid Scheme”
Victor Cuteanu, Alexandru Isar, Corina Nafornta - „Politehnica” University of Timișoara, Romania
“PAPR Reduction of OFDM Signals using Sequential Tone Reservation – Clipping Hybrid Scheme”
Victor Cuteanu, Alexandru Isar, Corina Nafornta - „Politehnica” University of Timișoara, Romania
“Phase Approximations from Gain Samples – The Logarithmic Frequency Domain - A Comparison”
Lacrimioara Grama - Technical University of Cluj-Napoca, Romania
“Improving Analog-To-Digital Converter’s Resolution Using the Oversampling Technique”
Flaviu Ilie Bob, Nicolae Cristian Pampu, Liviu Teodor Chira - Technical University of Cluj-Napoca, Romania

Coffee break: **10:40 – 11:10**

Session IV: **11:10 – 12:50**
Chair: Ioan Gavrea, *Technical University of Cluj-Napoca, Romania*
“Discussion on the Bottom-Up Synthesis of Consistent Graphs: DATEMM Revisited”
Martin Kreißig, Bin Yang - University of Stuttgart, Germany
“Applied Mathematics for the Modeling of a Non-Linear SOI Complex Device”
Cristian Ravariu, - Politehnica University of Bucharest, Romania
“Kramers-Kronig Computation in Logarithmic Frequency Domain”
Lacrimioara Grama, Adriana Chis - Technical University of Cluj-Napoca, Romania
“Building Riesz Bases with the Aid of Low-Pass Filters”
Dorina Isar, Alexandru Isar, Corina Nafornita - „Politehnica” University of Timișoara, Romania
“Integrating MEMS Sensors with GPS Technology for Obtaining a Continuous Navigation Solution in Urban Areas”
Lucian Ioan Iozan - Technical University of Cluj-Napoca, Romania
Jussi Collin, Jarmo Takala - Tampere University of Technology, Finland

Lunch: **12:50 – 14:00**

Workshop Trip: **14:00 – 21:00**
Turda Salt Mine and Aries Valley (**dinner included**)

August 28

Sunday, August 28,
Technical University of Cluj-Napoca, C. Daicoviciu Street, No 15, Room 474
"Alexandru Domșa"

Registration: **08:30 – 09:00**

Session V: **09:00 – 10:40**
Chair: Bogdan Cramariuc, *Center for Science and Technology, Bucharest, Romania*
“Speaker Recognition in an Emotional Environment”
Marius Vasile Ghiurcau, Corneliu Rusu - Technical University of Cluj-Napoca, Romania
Jaakko Astola - Tampere International Center for Signal Processing, Finland
“Improving Speech Emotion Recognition using Frequency and Time Domain Acoustic Features”
Simina Emerich, Eugen Lupu - Technical University of Cluj-Napoca, Romania
“A Comparative Study of MOTIF Detection Tools”

Alin Voina, Petre G. Pop, Ligia Chiorean - Technical University of Cluj-Napoca, Romania

"A Proportionate Affine Projection Algorithm using Fast Recursive Filtering and Dichotomous Coordinate Descent Iterations"

Felix Albu, - Politehnica University of Bucharest, Valahia University of Targoviste, Romania

"Lattice Vector Quantization for the Analysis of Molecular Data"

Cedric Ramassamy, Vincent Ricordel - Universite de Nantes, Polytech Nantes, France

Oana Cramariuc - Tampere University of Technology, Finland

Bogdan Cramariuc - Center for Science and Technology, Bucharest, Romania

Coffee break: **10:40 – 11:10**

Session VI: **11:10 – 12:50**

Chair: Constantin Vertan, *Politehnica University of Bucharest, Romania*

"Saliency Map Retrieval for Artistic Paintings Inspired from Human Understanding"

Razvan George Condorovici, Ruxandra Vrânceanu, Constantin Vertan - Politehnica University of Bucharest, Romania

"Multivariate Angle Scale Descriptor for Shape Retrieval"

Foteini Fotopoulou, George Economou - University of Patras, Greece

"A Modified Feature Relevance Estimation Approach to Relevance Feedback in Content-Based Image Retrieval Systems"

Ionut Mironica, Constantin Vertan - Politehnica University of Bucharest, Romania

"Colour Fractal Dimension for Psoriasis Image Analysis"

Alexandru Caliman, Mihai Ivanovici - Transilvania University, Brasov, Romania

Noel Richard - University of Poitiers, Poitiers, France

"Automatic Human Iris Color Classification"

Adrian Lodin - Technical University of Cluj-Napoca, Romania

Lunch: **12:50 – 14:00**

Post-Workshop **14:00 – 21:00**

Trip: Carpathians Lakes