

2008 International Zurich Seminar on Communications



March 12–14, 2008
Hotel Zürichberg, Zürich, Switzerland

Final Program

Acknowledgment of Support



The International Zurich Seminar on Communications (IZS) is organized jointly by the IEEE Switzerland Chapter on Digital Communication Systems and the Department of Information Technology and Electrical Engineering of ETH Zurich.



Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

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First Things First

Lunch

Lunch in the conference hotel is included in the regular registration (but not in the light registration). Make sure that you have a lunch ticket before 10:30 a.m. on each day.

Conference Banquet

The banquet on Thursday evening will be held in the hotel Baur au Lac, a member of “Leading Hotels of the World”:

Hotel Baur au Lac
Talstrasse 1, 8001 Zurich
Phone: +41 (0)44 220 50 20



The banquet starts with a reception at 19:00. Take the tram to “Paradeplatz” (e.g., tram 6 from “Zoo”) or to “Bürkliplatz” and walk from there.

Technical Program

Wednesday, March 12

Keynote Talk

Wed 09:00 – 10:00

Applications of Random-Set Theory to Wireless Communications

Ezio Biglieri, Univ. Pompeu Fabra, Barcelona

Session 1

Wed 10:30 – 12:10

Chair: Lizhong Zheng

*Energy-Delay Trade-offs in Wireless Networks 10:30

Randall Berry

*Opportunistic and Cooperative Wireless Networks 10:50

Behnaam Aazhang, Ashutosh Sabharwal

*Communicating Bursty and Delay-sensitive Information over Outage Limited Channels 11:10

Somsak Kittipiyakul, Petros Elia, Tara Javidi

*Euclidean Information Theory 11:30

Shashi Borade, Lizhong Zheng

*Invited papers are marked by an asterisk.

*Repetition Protocols and Channel State Information in Block-fading Channels 11:50
Daniela Tuninetti

Session 2 **Wed 14:00 – 15:40**

Chair: Matthias Grossglauser

*Wireless Social Community Networks: A Game-Theoretic Analysis 14:00
Mohammad Hossein Manshaei, Julien Freudiger, Mark Félegyházi, Peter Marbach, Jean-Pierre Hubaux

*On Mobile User Behaviour Patterns 14:20
Milan Vojnović

*Phase Transition in Opportunistic Mobile Networks 14:40
Augustin Chaintreau, Laurent Massoulié

*Fairness vs. Spatial Reuse in Wireless 802.11 Networks 15:00
Mathilde Durvy, Olivier Dousse, Patrick Thiran

*Routing in Mobile Wireless Networks 15:20
Dominique Tschopp, Suhas Diggavi, Matthias Grossglauser

Session 3 **Wed 16:10 – 17:50**

Chair: Nikolai Nefedov

Peak-to-Average Power Ratio Reduction in OFDM using ReedSolomon Codes 16:10
Robert F. H. Fischer, Christian Siegl

Client-Server Architecture Design based on Wiretap Codes	16:30
<i>Matthieu Bloch, Rajesh Narasimha, Steven W. McLaughlin</i>	
Electronic Equalization of Fiber Optic Links	16:50
<i>Andrew C. Singer, Naresh R. Shanbhag, Hyeon-Min Bae</i>	
Solving the Interaction Problem of Timing Synchronization and Equalization	17:10
<i>Dirk Daecke, Heinrich Schenk</i>	
Signal Reconstruction in Multidimensional Sensor Fields	17:30
<i>Alessandro Nordin, Carla-Fabiana Chiasserini, Emanuele Viterbo</i>	

Thursday, March 13

Keynote Talk

Thu 09:00 – 10:00

**How a False Probability Model Changed the World:
Birth, Death, and Reincarnation of Black-Scholes**

Michael Steele, Wharton Univ. of Pennsylvania

Session 4

Thu 10:30 – 12:10

Chair: Gerhard Kramer

Axiomatic Characterization of Resource Allocation and Social Welfare Orderings for Centralized Wireless Communication 10:30

Holger Boche, Siddharth Naik

Finite-Length Scaling of Repeat-Accumulate Codes on the BEC <i>Iryna Andriyanova</i>	10:50
Nonbinary Decoding of Structured LDPC Codes <i>Daniele Capirome, Giacomo Como, Fabio Fagnani, Federica Garin</i>	11:10
Information Indivisibility Results <i>Jossy Sayir, Ingmar Land, Alex Grant</i>	11:30
Generalized Modulation and Iterative Demodulation <i>Christian Schlegel, Dmitri Truhachev</i>	11:50

Session 5

Thu 14:00 – 15:40

Chair: Greg Wornell

*Lossy Source Coding via Markov Chain Monte Carlo <i>Shirin Jalali, Tsachy Weissman</i>	14:00
*Iterative Linear-Programming-Based Route Optimization for Cooperative Networks <i>Stark C. Draper, Lingjia Liu, Andreas F. Molisch, Jonathan S. Yedidia</i>	14:20
*An Efficient ARQ Scheme with SNR Feedback <i>Uri Erez, Mitchell Trott, Gregory Wornell</i>	14:40
*Information Flow over Compound Wireless Relay Networks <i>Salman Avestimehr, Suhas N. Diggavi, David N. C. Tse</i>	15:00
*On Universal Coding for Parallel Gaussian Channels <i>Maryam Modir Shanechi, Uri Erez, Gregory Wornell</i>	15:20

Session 6

Thu 16:10 – 17:50

Chair: Michael Gastpar

*Wireless Sensor Networks for Environmental Monitoring: The SensorScope Experience 16:10

Guillermo Barrenetxea, François Ingelrest, Gunnar Schaefer, Martin Vetterli

*Achievable Distortion/Rate Tradeoff in a Decentralized Gaussian Parameter Estimation Problem 16:30

Anna Scaglione, Mehmet E. Yildiz, Tuncer C. Aysal

*Sentry Selection in Sensor Networks: A Sufficient Condition for k Single Covers 16:50

Paul Balister, Béla Bollobás, Martin Haenggi, Amites Sarkar, Mark Walters

*On the Multiple-Access Channel with Common Rate-Limited Feedback 17:10

Dor Shaviv, Yossef Steinberg

*Structured Random Codes and Sensor Network Coding Theorems 17:30

Bobak Nazer, Michael Gastpar

Friday, March 14

Keynote Talk

Fri 09:00 – 10:00

Decentralized Detection over a Tree of Sensors

John Tsitsiklis, MIT

Session 7

Fri 10:30 – 12:10

Chair: Helmut Boelcskei

On Fast-Decodable Space-Time Block Codes 10:30

Ezio Biglieri, Yi Hong, Emanuele Viterbo

Convex Precoding for Vector Channels in High Dimensions 10:50

Rodrigo de Miguel, Ralf R. Müller

UEP Exploitation in MIMO-OFDM with Beamforming and Channel-Correlation Feedback 11:10

Khaled Hassan, Werner Henkel

On the Impact of TDM in Estimation of MIMO Channel Capacity from Phase-Noise Impaired Measurements 11:30

Troels Pedersen, Attaphongse Taparugssanagorn, Juha Ylitalo, Bernard H. Fleury

Distributed Space-Time Block Codes for the Non-Cooperative Multiple Access Channel 11:50

Maya Badr, Jean-Claude Belfiore

Session 8

Fri 14:00 – 15:40

Chair: Amos Lapidoth

Rate-Delay Tradeoffs for Communicating a Bursty Source over an Erasure Channel with Feedback 14:00

Brian P. Dunn, Nicholas J. Laneman

Diversity-Multiplexing Tradeoff for the Slow Fading Interference Channel 14:20

Ekine Akuiyibo, L ev eque Olivier

Capacity Bounds for Two-Way Relay Channels <i>Wooseok Nam, Sae-Young Chung, Yong H. Lee</i>	14:40
Multi-Layer Broadcast Hybrid-ARQ Strategies <i>Avi Steiner, Shlomo Shamai (Shitz)</i>	15:00
Scaling Laws in Decentralized Processing of Interfered Gaussian Channels <i>Amichai Sanderovich, Michael Peleg, Shlomo Shamai (Shitz)</i>	15:20

Conference Organization

General Co-Chairs

Amos Lapidoth and Hans-Andrea Loeliger

Technical Program Committee

Amos Lapidoth
Hans-Andrea Loeliger
Ezio Biglieri
Holger Boche
Helmut Bölcskei
Pierre Chevillat
Bernard Fleury
Christina Fragouli
Martin Hänggi

Walter Hirt
Gerhard Kramer
Stefan Moser
Nikolai Nefedov
Emre Telatar
Pascal Vontobel
Roger Wattenhofer
Armin Wittneben

Organizers of Invited Sessions

Behnaam Aazhang
Michael Gastpar
Matthias Grossglauser

Lizhong Zheng
Gregory Wornell

Local Organization

Secretary:	Bernadette Rösli and Marion Brändle
Web:	Patrik Strebel
Publications:	Marion Brändle and Murthy Devarakonda
Local Arrangements:	Patrik Strebel and Bernadette Rösli

Conference Schedule

Tuesday, March 11

16:00 – 18:00 Registration desk open

Wednesday, March 12

08:00 Registration desk opens
08:50 Opening address
09:00 – 10:00 Keynote lecture by Ezio Biglieri
10:30 – 12:10 Session 1
12:30 Lunch
14:00 – 15:40 Session 2
16:10 – 17:50 Session 3

Thursday, March 13

09:00 – 10:00 Keynote lecture by Michael Steele
10:30 – 12:10 Session 4
12:30 Lunch
14:00 – 15:40 Session 5
16:10 – 17:50 Session 6
19:00 Banquet in the Hotel Baur au Lac

Friday, March 14

09:00 – 10:00 Keynote lecture by John Tsitsiklis
10:30 – 12:10 Session 7
12:30 Lunch
14:00 – 15:40 Session 8