

2013 Iran Workshop on Communication and Information Theory

(IWCIT 2013)

**Tehran, Iran
8 – 9 May 2013**



**IEEE Catalog Number: CFP13WCI-POD
ISBN: 978-1-4673-5020-4**

Table of Content

Gerhard Kramer (Keynote Speaker)

Title: **Information Theory for Networks with in-Block Memory** N/A

Tara Javidi (Invited Talk)

Title: **Rate–Reliability Tradeoff in Two-Dimensional Visual Search**

Mohammad Naghshvar and Tara Javidi

Mohsen Razavi (Invited Talk)

Title: **Novel Architectures for Hybrid Quantum-Classical Networks**

Nicolo Lo Piparo, Christiana Panayi, Divya Ramanujachari, David E. Bruschi and Mohsen Razavi

S1. Multi-Terminal Information Theory (I)

S2. Multi-Terminal Information Theory (II)

S3. Information Theoretic Security

S. Jamaloddin Golestani (Invited Talk)

Title: **Unified Treatment of Network Routing, Flow Control, and Scheduling**

S4. Communication Theory

Farzad Parvaresh (Invited Talk)

Title: **On Computing Half-duplex Relaying Capacity in Networks with Orthogonal Channels**

Farzad Parvaresh, Raul Etkin, Ilan Shomorony and Salman Avestimehr

S5. Relay Networks

S6. Coding Theory

Sessions

S1. Multi-Terminal Information Theory (I)

Chairs: **M. Mirmohseni and M. Sabbaghian**

On Dimension Bounds for Quantum Systems

Salman Beigi and Amin Gohari

Multi-layer Gelfand-Pinsker Strategies for the Generalized Multiple Access Channel

Mohammad Javad Emadi, Majid Nasiri Khormuji, Mikael Skoglund and

Mohammad Reza Aref

Secure Noisy Network Coding

Mohammad Hossein Yassaee, Mohammad Reza Aref and Amin Aminzadeh Gohari

Interference Channel with Common Message and Slepian-Wolf Channel State Information

Mostafa Monemizadeh, Saeed Hajizadeh, Ghosheh Abed Hodtani and Seyed Alireza Seyedin

S2. Multi-Terminal Information Theory (II)

Chairs: **B. Akhbari and P. Azmi**

Degrees of Freedom in a Three-User Cognitive Interference Channel

Zahra Shakeri, Arman Fazeli Chaghooshi, Mahtab Mirmohseni and Mohammad Reza Aref

An Achievable Rate Region for Interfering Multiple Access Channel and Broadcast Channel with a Cognitive Transmitter

Hamed Fehri, H. Khoshbin, Ghosheh Abed Hodtani and Mostafa Monemizadeh

Achievable Rate Regions for the Dirty Multiple Access Channel with Partial Side Information and Collaboration At the Transmitters

Elham Bahmani and Ghosheh Abed Hodtani

S3. Information Theoretic Security

Chairs: **A.A. Tadaion and A. Gohari**

High SNR Performance of Amplify-and-Forward Relaying in Rayleigh Fading Wiretap Channels

Frederic Gabry, Somayeh Salimi, Ragnar Thobaben and Mikael Skoglund

Key Agreement Over A State-Dependent 3-Receiver Broadcast Channel

Mohsen Bahrami, Ali Bereyhi, Sadaf Salehkalaibar and Mohammad Reza Aref

On the Secrecy Capacity of Cooperative Wiretap Channel

Meysam Mirzaee and Soroush Akhlaghi

Perfect Secrecy Via Compressed Sensing

Mahmoud Ramezani Mayiami, Babak Seyfe and Hamid Bafghi

S4. Communication Theory

Chairs: **M. Nasiri and F. Haddadi**

On Expected Capacity of Multicarrier Frequency Hopping Systems

Zolfa Zeinalpour-Yazdi and Shirin Jalali

Network Delay Analysis of a (σ , ρ)-Regular Traffic Stream Over Multiple Paths in a Network of Fair Queuing Servers

Jalal Khamse Ashar and S. Jamaloddin Golestani

Delay Analysis and Buffer Management for Random Access in Cognitive Radio Networks

Saber Salehkaleybar, Seyyed Arash Majd and Mohammad Reza Pakravan

A Network Coding-Based Packet Forwarding Scheme for Unicast Random Access Networks with Exponential Backoff

Farzaneh Farhadi and Farid Ashtiani

Mathematical Modeling of Nonlinearity Impairments in Optical OFDM Communication Systems Using Multiple Optical Phase Conjugate

Morteza Hasani Shoreh, Hamzeh Beyranvand and Jawad Salehi

Towards Optimization of Toeplitz Matrices for Compressed Sensing

Masomeh Azghani, Ali Aghagolzadeh and Farokh Marvasti

S5. Relay Networks

Chairs: **G. A. Hodtani and H. Behroozi**

Finite-SNR Diversity-Multiplexing Tradeoff in Multi-Relay Channels

Farzin Haddadpour, Ehsan Gholami, Seyed Hamed Rastegar and Hamid Behroozi

Optimal Power and Rate Allocation in the Degraded Gaussian Relay Channel with Energy Harvesting Nodes

Mahmood Mohassel Feghhi, Aliazam Abbasfar and Mahtab Mirmohseni

Analytical Power Allocation for a Full Duplex Decode-and-Forward Relay Channel

Arash Gholami Davoodi, Mohammad Javad Emadi and Mohammad Reza Aref

Alamouti Coding Scheme for Cooperative Relay Networks with Full Duplex Relaying

Fatemeh Hosseini G., Mohammad Samavat and Siamak Talebi

S6. Coding Theory

Chairs: **F. Lahouti and A. Aghagolzadeh**

Extended Polar Codes Perform Better in Terms of Compound Rate and Scaling Behavior

S. Hamed Hassani

On the Performance of Polar Codes for Lossy Compression of Gaussian Sources

Sajjad Eghbalian and Hamid Behroozi

Channel Coding Adoption Versus Increasing Sensing Time in Secondary Service to Manage the Effect of Imperfect Spectrum Sensing in Cognitive Radio Networks

Sadjad Haddadi, Hamid Saeedi and Keivan Navaie

On the Performance of 1-level LDPC Lattices

Mohammad-Reza Sadeghi and Amin Sakzad