

# Hawaii, IEICE and SITA Joint Conference on Information Theory

May 25 - 27, 2005  
East-West Center, Hawaii, USA

## Advance Program

### Wed, May 25

#### Session 1 (11:00- 12:00) Chair: Hiroshi Kamabe

Using Loosely Triangular Form in Encoding LDPC codes with the LU-decomposition  
*Yuichi Kaji\** (NAIST)

Vector Quantization of Convolutional Decoder State Metrics  
*Brian Kurkoski\**, *Kazuhiko Yamaguchi* (Univ. of Electro-Comm.)

Sensor Network Localization Using Pattern Recognition and Least Squares Kernel Methods  
*Chaopin Zhu\**, *Anthony Kuh* (Univ. of Hawaii)

#### Session 2 (13:30- 15:10) Chair: Galen Sasaki

Comparison of Rate Estimation Techniques for Rate-Compatible LDPC Codes  
*Tomoyasu Yoshikawa\**, *Tetsuo Tsujioka*, *Hisayoshi Sugiyama* (Osaka City Univ.),  
*Masashi Murata* (Ryukoku Univ.)

A Proposal of Rate-Compatible Low-Density Parity-Check Code for Land Mobile Radio  
*Chen Zheng\**, *Toshinori Suzuki* (KDDI R&D Labs.)

Performance Evaluation of Turbo Trellis-Coded Modulation Schemes Using Multidimensional 4-, 8- and 16-PSK Signal Sets  
*Katsutoshi Yamamoto\**, *Tetsuo Tsujioka*, *Hisayoshi Sugiyama* (Osaka City Univ.),  
*Masashi Murata* (Ryukoku Univ.)

Reduced Latency Iterative Decoding  
*Yige Wang\**, *Juntan Zhang*, *Marc Fossorier* (Univ. of Hawaii), *Jonathan Yedidia* (MERL)

LDPC Design for Mobile Communication Key Technologies  
*Tsuguo Maru\** (NEC)

**Session 3 (15:30- 16:50) Chair: Toshinori Suzuki**

An Application of Iterative Channel Estimation to Fading Compensation using Metrics Comparison in Burst Mode COFDM Transmission  
*Haruhito Yoshida\**, *Fumiaki Maehara*, *Fumio Takahata* (Waseda Univ.)

Dual-Optimization of General Orthogonal Modulations for Two Channel Impairments  
*Sohei Takeda\**, *Takashi Yasunaga*, *Ikuo Oka*, *Shingo Ata* (Osaka City Univ.), *Chikato Fujiwara* (Osaka Seikei Univ.)

Using Mixed Distribution for Modeling End-to-End Delay Characteristics  
*Yasuhiro Sato\**, *Shingo Ata*, *Ikuo Oka* (Osaka City Univ.), *Chikato Fujiwara* (Osaka Seikei Univ.)

An Effect of Migration Log Losses on the Searching Costs for Mobile Agents  
*Ryo Nakanishi\**, *Masayuki Ishii*, *Shinsuke Kobayashi*, *Yoshikuni Onozato*, *Ken'ichi Kawanishi* (Gunma Univ.)

**Thu, May 26**

**Invited Lecture 1 (9:30- 10:30) Chair: W.Wesley Peterson**

Algebraic Constructions of Quasi-Cyclic LDPC Codes for AWGN and Binary Erasure Channels  
*Shu Lin\** (UC Davis)

**Invited Lecture 2 (10:40- 11:40) Chair: Hideki Imai**

Collaboration with Drs Peterson and Lin at University of Hawaii  
*Tadao Kasami\** (NAIST)

**Session 4 (13:30- 15:10) Chair: Tomoharu Shibuya**

Fast Algorithm for Generating Candidate Codewords in Reliability-Based Maximum Likelihood Decoding  
*Hideki Yagi\**, *Toshiyasu Matsushima*, *Shigeichi Hirasawa* (Waseda Univ.)

The Local Weight Distributions of Transitive Invariant Codes and Their Punctured Codes

*Kenji Yasunaga\**, *Toru Fujiwara* (Osaka Univ.)

A Note on the Construction of Nonlinear Unequal Orthogonal Arrays from Error-Correcting Codes

*Tomohiko Saito\**, *Toshiyasu Matsushima*, *Shigeichi Hirasawa* (Waseda Univ.)

On Small-Scale Decoders for Codes on  $C_{ab}$  Curves

*Hajime Matsui\**, *Seiichi Mita* (Toyota Tech. Inst.)

On the Condition for Detecting  $(t + \mu)$ -error by Reed-Solomon Decoder Based on the Welch-Berlekamp Algorithm

*Masami Mohri\**, *Masakatu Morii* (The Univ. of Tokushima)

#### **Session 5 (15:30- 16:50) Chair: Hideki Yoshikawa**

Improved Min-Sum Decoding of Irregular LDPC Codes

*Juntan Zhang\**, *Marc Fossorier* (Univ. of Hawaii), *Daqing Gu*, *Jinyun Zhang* (MERL)

Some Notes on the CCCP Decoding of Linear Codes

*Tomoharu Shibuya\** (NIME)

Design of IRA Codes with Joint Degree Distributions

*Kenta Kasai\**, *Shinya Miyamoto*, *Tomoyuki Ichikawa* (Tokyo Tech.), *Tomoharu Shibuya* (NIME), *Kohichi Sakaniwa* (Tokyo Tech.)

A Decoding Algorithm for LDPC Codes using Threshold Control for the Burst Error Channel

*Masato Yabe*, *Kazuhiko Yamaguchi\**, *Brian Kurkoski*, *Kingo Kobayashi* (Univ. of Electro-Comm.)

## **Fri, May 27**

#### **Session 6 (9:30- 10:30) Chair: Anthony Kuh**

Encoding Algorithms for 2 Dimensional Weak Run-Length-Limited Constraints

*Hiroshi Kamabe\** (Gifu Univ.)

Separate Source Coding of Correlated Gaussian Remote Observations

*Yasutada Oohama\** (Kyushu Univ.)

A Study of Reliability Based Hybrid ARQ Scheme with Bitwise Posterior Probability Evaluation from Message Passing Algorithm

*Daiki Koizumi\**, *Naoto Kobayashi*, *Toshiyasu Matsushima*, *Shigeichi Hirasawa* (Waseda Univ.)

**Session 7 (10:40- 12:00) Chair: Fumiaki Maehara**

A Flexible Optical CDMA Systems Using Optical Orthogonal Codes with Unequal Weights

*Tetsuo Tsujioka\**, *Kazunari Inoue*, *Hisayoshi Sugiyama* (Osaka City Univ.), *Masashi Murata* (Ryukoku Univ.)

Modulation Classification Error Analysis with Phase Offset

*Daisuke Shimbo\**, *Go Fukuda*, *Ikuo Oka*, *Shingo Ata* (Osaka City Univ.), *Chikato Fujiwara* (Osaka Seikei Univ.)

Performance Analysis of MC-CDMA with Frequency Interleaving Technique in Multipath Fading Environments

*Masato Furudate\**, *Hiroyasu Ishikawa*, *Toshinori Suzuki* (KDDI R&D Labs.)

The Multiuser Error Probability of Reed-Solomon Codes

*Mostafa El-Khamy\** (Caltech)

**Session 8 (13:30- 15:10) Chair: Yuichi Kaji**

A Remark On GEM

*Rui Zhang\**, *Goichiro Hanaoka*, *Hideki Imai* (Univ. of Tokyo)

A Time-Limited Key Management Scheme Based on a One-Way Permutation Tree

*Maki Yoshida\** (Osaka Univ.), *Yuichi Kaji* (NAIST), *Toru Fujiwara* (Osaka Univ.)

Efficient Strong Multiple Encryption from Relaxed Conditions

*Yang Cui\**, *Kazukuni Kobara*, *Hideki Imai* (Univ. of Tokyo)

Visual Commitment Using the Trusted Initializer

*Hidenori Kuwakado\** (Kobe Univ.), *Hatsukazu Tanaka* (Kobe Inst. of Computing)

A Novel Approach to Algebraic and Fast Correlation Attacks for Cryptanalysis of Certain Keystream Generators

*Miodrag Mihaljevic\** (Serb. Acad. Sci & Arts), *Marc Fossorier* (Univ. of Hawaii), *Hideki Imai* (Univ. of Tokyo)

**Session 9 (15:30- 16:50) Chair: Tetsuo Tsujioka**

Iterative Biased Reliability-Based Decoding of Binary Linear Codes

*Wenyi Jin\**, *Marc Fossorier* (Univ. of Hawaii)

On the Input-Output Weight Distribution of Serial Concatenated Convolutional Codes

*Hideki Yoshikawa\** (Suzuka Nat. Col. Tech.)

Average Coset Weight Distribution of Combined LDPC Matrix Ensemble

*Tadashi Wadayama\** (Nagoya Inst. Tech.)

A Construction of Quasic-Cyclic LDPC Codes for the AWGN, Erasure and Bursty Channels

*Lingqi Zeng\**, *Lan Lan*, *Ying Y. Tai*, *Shu Lin* (UC Davis)