The 2nd International Symposium on Information Geometry and its Applications

December 12-16, 2005
Sanjo Conference Hall, University of Tokyo, Japan

Program

Oral presentations will be allocated 40 minutes including discussion time
(30 minutes talk and 10 minutes discussion).

Day 1: DECEMBER 12, 2005

Registration TIME: 9:30-10:00
Opening TIME: 10:00-10:10

Session 1-1 TIME 10:10-11:30 Chaired by A. Takemura
Shinto Eguchi (Institute of Statistical Mathematics) 10:10-10:50
Tubular modelling approach to statistical method for observational studies
Peter Jupp (University of St Andrews) 10:50-11:30
Geometry of yokes

LUNCH

Session 1-2 TIME: 13:00-15:00 Chaired by G. Pistone
Shun-ichi Amari (RIKEN) 13:00-13:40
Alpha-integration of stochastic evidences
Philip Dawid (University College London) 13:40-14:20
Decision geometry
Jun'ichi Takeuchi (NEC Corporation) 14:20-15:00
Statistical curvature and stochastic complexity

COFFEE BREAK

Session 1-3 TIME: 15:30-17:30 Chaired by P. Marriott
Frank Critchley (Open University) 15:30-16:10
On the geometry of influence analysis
Hironori Fujisawa (Institute of Statistical Mathematics) 16:10-16:50
A new approach to robust parameter estimation against heavy contamination
Tadayoshi Fushiki (Institute of Statistical Mathematics) 16:50-17:30
Bootstrap prediction and Bayesian prediction

Day 2: DECEMBER 13, 2005

Session 2-1 TIME: 9:30-11:30 Chaired by P. Dawid

Atsumi Ohara (Osaka University) 9:30-10:10
Affine differential geometric aspects of Tsallis statistics

Jun Zhang (University of Michigan) 10:10-10:50
Referential duality and representational duality on statistical manifolds

Hiroshi Matsuzoe (Nagoya Institute of Technology) 10:50-11:30
Conformal-projective structures on statistical manifolds and cubic form geometry

LUNCH

Session 2-2 TIME: 13:00-15:00 Chaired by P. Vos

Giovanni Pistone (Politecnico of Turin) 13:00-13:40
Advances in the geometry of non-parametric exponential models

Paul Marriott (University of Waterloo) 13:40-14:20
Local and global mixture geometry

Fumiyasu Komaki (University of Tokyo) 14:20-15:00
Information geometry of Bayesian inference

COFFEE BREAK

Session 2-3 TIME: 15:30-17:30 Chaired by P. Jupp

Yukio Otsu (Kyushu University) 15:30-16:10
Statistical mechanics of harmonic oscillators on Riemannian manifolds

Guy Lebanon (Purdue University) 16:10-16:50
Information geometry and document classification

Motoaki Kawanabe (Fraunhofer FIRST) 16:50-17:30
In search of non-Gaussian components of a high-dimensional distribution

JOINT DINNER TIME: 18:00-

Day 3: DECEMBER 14, 2005

Session 3-1 TIME: 9:30-11:30 Chaired by J. Zhang

Masayuki Henmi (University of Warwick) 9:30-10:10
A paradoxical effect of nuisance parameters and geometry of estimating functions

Paul Vos (East Carolina University) 10:10-10:50
An information geometric approach to understanding inference on a discrete sample space

Hidetoshi Shimodaira (Tokyo Institute of Technology) 10:50-11:30
Geometry of multiscale bootstrap resampling

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EXCURSION TIME: 13:00-

Day 4: DECEMBER 15, 2005

Session 4-1 TIME: 9:30-11:30 Chaired by D. Brody

Keiji Matsumoto (National Institute of Informatics) 9:30-10:10
Reverse estimation theory, monotone distances, and RLD based geometry

Masahito Hayashi (JST) 10:10-10:50
Characterization of several kinds of quantum analogues of relative entropy

Paolo Gibilisco (University of Rome "Tor Vergata") 10:50-11:30
Quantum Fisher information and uncertainty principle

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Session 4-2 TIME: 13:00-15:40 Chaired by P. Gibilisco

Denes Petz (Alfred Renyi Institute of Mathematics, HAS) 13:00-13:40
Information geometry and statistical inference

Akio Fujiwara (Osaka University) 13:40-14:20
Information geometry of quantum channel estimation

Hiroshi Nagaoka (University of Electro-Communications) 14:20-15:00
A quantum/complex extension of information geometry

Dorje Brody (Imperial College) 15:00-15:40
Quantum states and space-time causality

Poster session TIME: 15:40-17:40
(At the beginning of this session, a short oral session for one-minute poster preview will be held.)

Karim Anaya (Open University)
Local mixtures of natural exponential families with quadratic variance function

Marco Cuturi (Institute of Statistical Mathematics)
Semigroup spectral kernels on measures

Markus A. Dahlem (Otto-Von-Guericke University Magdeburg)
What is the geometric structure of probability density models of canonical training sets for curved Kohonen layers?

Shigeru Furuichi (Tokyo University of Science in Yamaguchi)
On generalized skew information and uncertainty relation

Daniele Imparato (Politecnico of Turin)
An application of the differential geometrical manifold structure modeled on the topology of Orlicz spaces for the study of local martingales

Masanori Kawakita (Graduate University of Advanced Studies)
Geometrical structure of local boosting

Kei Kobayashi (Institute of Statistical Mathematics)
Shrinkage prediction for the Normal regression problem with Kullback-Leibler loss function

Michael Mayer (Osaka University)
What is the right metric for the modelling of feature maps in the visual cortex?

Bernhard Meister (Renmin University of China)
Implications of the Lüders postulate for quantum algorithms

Tetsuro Morimura (Nara Institute of Science and Technology)
Utilizing natural gradient in temporal difference reinforcement learning with eligibility traces

Yoshiyuki Ninomiya (Kyushu University)
Application of tube method for the maximum of Gaussian random variables with discrete index set

Tomonari Sei (University of Tokyo)
Asymptotically efficient estimate of the fractal index of Gaussian processes

Takashi Takenouchi (Nara Institute of Science and Technology)
Robust boosting algorithm for multiclass classification by eta-divergence

Fuyuhiko Tanaka (University of Tokyo)
Geometrical structure of the ARMA model manifold and its application to Bayesian methods

Masaru Tanaka (Saitama University)
On a statistically equiaffine model which isn't conjugate symmetric

SYMPOSIUM BANQUET TIME: 18:00-20:00

Day 5: DECEMBER 16, 2005

Session 5-1 TIME: 9:30-11:30 Chaired by G. Lebanon

Takafumi Kanamori (Tokyo Institute of Technology) 9:30-10:10
Integrability of weak learner on boosting

Shiro Ikeda (Institute of Statistical Mathematics) 10:10-10:50
Information geometry of propagation algorithms and approximate inference

Noboru Murata (Waseda University) 10:50-11:30
Information geometry of Bregman divergence and its application to learning algorithms

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Session 5-2 TIME: 13:00-15:00 Chaired by F. Critchley

Kenji Fukumizu (Institute of Statistical Mathematics) 13:00-13:40
Infinite dimensional exponential families by reproducing kernel Hilbert spaces

Satoshi Kuriki (Institute of Statistical Mathematics) 13:40-14:20
Euler characteristic heuristic for approximating the distribution of the largest eigenvalue of an orthogonally invariant random matrix

Akimichi Takemura (University of Tokyo) 14:20-15:00
Kullback divergence in game-theoretic probability protocols

Closing