International Symposium on Recent Advances in Theories and Methodologies for Large Complex Data

December 7-9, 2023

Venue:

Conference Room 101, Tsukuba International Congress Center

2-20-3 Takezono, Tsukuba, Ibaraki 305-0032, Japan (Hybrid Symposium with Zoom)

Organizers:

Makoto Aoshima (University of Tsukuba)

Kazuyoshi Yata   (University of Tsukuba)

Aki Ishii   (Tokyo University of Science)

Kento Egashira   (Tokyo University of Science)

Supported by

Program (UTC+9)

December 7 (Thursday)

13:50~14:00   Opening

14:00~14:40   Kento Egashira^{*,a}, Kazuyoshi Yata^{b} and Makoto Aoshima^{b}

^{a}(Department of Information Sciences, Tokyo University of Science)

^{b}(Institute of Mathematics, University of Tsukuba)

Asymptotic properties of kernel k-means for high dimensional data

14:50~15:30   Yohji Akama

(Mathematical Institute, Tohoku University)

Broken-stick components retention rule for equi-correlated normal population

15:40~16:20   Takayuki Morimoto

(School of Science, Kwansei Gakuin University)

Forecasting high-dimensional covariance matrices using high-dimensional principal component analysis

16:30~17:10   Shao-Hsuan Wang

(Graduate Institute of Statistics, National Central University)

A geometric algorithm for contrastive principal component analysis in high dimension

17:20~18:00   Taiji Suzuki[*,a], Denny Wu[b], Atsushi Nitanda[c] and Kazusato Oko[a]

(Zoom)   [a](Department of Mathematical Informatics, The University of Tokyo / RIKEN AIP)

[b](Center for Data Science, New York University)

[c](Department of Artificial Intelligence, Kyushu Institute of Technology / RIKEN AIP)

Feature learning via mean field neural networks and anisotropic features

December 8 (Friday)

9:00~9:40   Akifumi Okuno

(The Institute of Statistical Mathematics / RIKEN AIP)

Statistical estimation with integral-based loss functions

9:50~10:30   Masaaki Imaizumi

(Komaba Institute for Science, The University of Tokyo / RIKEN AIP)

Non-sparse high-dimensional statistics and its applications

10:40~11:20   Tsutomu T. Takeuchi

(Division of Particle and Astrophysical Science, Nagoya University)

Statistical challenges to dimensionality in astronomical big data

11:30~12:10   Yuan-Tsung Chang[*,a], Nobuo Shinozaki[b] and William, E. Strawderman[c]

[a](Department of Social Information, Mejiro University)

[b](Faculty of Science and Technology, Keio University)

[c](Department of Statistics, Rutgers University)

Predictive density estimation for two ordered normal means under α-divergence loss

12:10~13:40   Lunch

13:40~18:00   **Special Invited and Keynote Sessions**

19:00~21:00   Dinner

December 9 (Saturday)

9:00~9:40   Shogo Nakakita

(Komaba Institute for Science, The University of Tokyo)

**On approximate sampling from non-log-concave non-smooth distributions
via a Langevin-type Monte Carlo algorithm**

9:50~10:30   Kou Fujimori[*,a] and Koji Tsukuda[b]

[a](Department of Economics, Shinshu University)

[b](Faculty of Mathematics, Kyushu University)

Two step estimations via the Dantzig selector for ergodic time series models

10:40~11:20   Junichi Hirukawa[*,a] and Kou Fujimori[b]

[a](Faculty of Science, Niigata University)

[b](Department of Economics, Shinshu University)

Innovation algorithm of fractionally integrated ($I(d)$) process and applications on the estimation of parameters

11:30~12:10   Kengo Kamatani

(The Institute of Statistical Mathematics)

Scaling limits of Markov chains/processes in Monte Carlo methods

12:20~13:00   Takahiro Nishiyama[*,a] and Masashi Hyodo[b]

[a](Department of Business Administration, Senshu University)

[b](Department of Economics, Kanagawa University)

On a general linear hypothesis testing problem for latent factor models in high dimensions

13:00~13:10   Closing

(∗ Speaker)

Special Invited and Keynote Sessions

December 8 (Friday)

Special Invited Session

13:40~14:30   **On the efficiency-loss free ordering-robustness of product-PCA**

Speaker: Hung Hung

       (Institute of Health Data Analytics and Statistics, National Taiwan University)

Discussion Leader: Yuan-Tsung Chang   (Department of Social Information, Mejiro University)

14:40~15:30   **Learning ordinality in high-dimensional data**

Speaker: Jeongyoun Ahn

       (Department of Industrial and Systems Engineering, KAIST)

Discussion Leader: Kazuyoshi Yata   (Institute of Mathematics, University of Tsukuba)

Keynote Session

15:50~16:50   **Normal-reference test for high-dimensional covariance matrices**

Speaker: Jin-Ting Zhang

       (Department of Statistics and Data Science, National University of Singapore)

Discussion Leader: Aki Ishii   (Department of Information Sciences, Tokyo University of Science)

17:00~18:00   **Testing high-dimensional general linear hypotheses through spectral shrinkage**

Speaker: Debashis Paul

(Zoom)   (Department of Statistics, University of California, Davis / Indian Statistical Institute, Kolkata)

Discussion Leader: Yuta Koike   (Graduate School of Mathematical Sciences, The University of Tokyo)