Monday, July 19.

*All times are KST (UTC+9)

09:00 - 10:00 KST

IMS Presidential Address

IMS Presidential Address
Regina Liu, Susan Murphy
Chair: TBA

11:30 - 12:00 KST

IS30. Functional Estimation, Testing and Clustering under Sparsity
Organizer: Jiashun Jin
Chair: TBA

- Estimating the number of communities by Stepwise Goodness-of-fit
  Zheng Ke (Harvard University)
- Statistical Inference for Linear Mediation Models with High-dimensional Mediators
  Runze Li (Penn State University)
- TBA
  Ming Yuan (Columbia University)

IS39. KSS Invited Session: Interactive Particle Systems and Urn Models
Organizer: Woncheol Jang
Chair: TBA

- Convergence of randomized urn models with irreducible and reducible replacement
  Li-Xin Zhang (Zhejiang University)
- Condensation phenomenon and metastability in interacting particle systems
  Insuk Seo (Seoul National University)
- Time Correlation exponents in planar last passage percolation
  Riddhipratim Basu (International Centre for Theoretical Sciences-TIFR)

OCS02. Nonlocal Operators Related to Probability
Organizer: Ildoo Kim
Chair: Ildoo Kim

- A Sobolev space theory for time-fractional stochastic PDE driven by Levy processes
  Daehan Park (Korea Advanced Institute of Science and Technology (KAIST))
- A regularity theory for stochastic modified Burgers’ equation driven by multiplicative space-time white noise
  Beom-Seok Han (Pohang University of Science and Technology)
Monday, July 19.

- General Law of iterated logarithm for Markov processes
  Jaehun Lee (Korea Institute for Advanced Study)
- Heat kernel estimates for subordinate Markov processes and their applications
  Soobin Cho (Seoul National University)
- A maximal $L^p$-regularity theory to initial value problems with time measurable nonlocal operators generated by additive processes
  Jae-Hwan Choi (Korea University)

**OCS15. Network-related Statistical Methods and Analysis**
Organizer: Donghyeon Yu
Chair: Donghyeon Yu

- Estimation of Particulate Levels Using Deep Dehazing Network and Temporal Prior
  SungHwan Kim (Konkuk University)
- Graph-Regularized Contextual Bandits with Scalable Thompson Sampling and Semi-Parametric Reward Models
  Young-Geun Choi (Sookmyung Women’s University)
- INN: A stable method identifying clean-annotated samples via consistency effect in deep neural networks
  Dongha Kim (Sungshin Women’s University)
- An efficient parallel block coordinate descent algorithm for large-scale precision matrix estimation using graphics processing units
  Donghyeon Yu (Inha University)

**OCS23. Recent Advances in Statistical Methods for Large Scale Complex Data**
Organizer: Seyoung Park
Chair: Seyoung Park

- Multivariate responses quantile regression for regional quantiles with applications to CCLE data
  Seyoung Park (Sungkyunkwan University)
- On Sufficient Graphical Models
  Kyongwon Kim (Ewha Womans University)
- Principal Component Analysis in the Wavelet Domain
  Yaeji Lim (Chung Ang University)
- Bayesian inference of evolutionary models from genomic data
  Yujin Chung (Kyonggi University)

**19:00 - 20:00 KST**

**Wald Lecture 1**

Random walks and fractal graphs
Martin Barlow (University of British Columbia)
Chair: TBA

**20:00 - 21:00 KST**

**Bernoulli Lecture**

Some models of spatially distributed populations: the effect of crowding
Alison Etheridge (University of Oxford)
Chair: TBA
Monday, July 19.

**IS17. Approximate Bayesian Computation**  
Organizer: Yanan Fan  
Chair: TBA

- Approximate inference for ordinal linear regression  
  Jean-Luc Dortet-Bernadet (Université de Strasbourg)  
- Generalized Bayesian Likelihood-Free Inference Using Scoring Rules Estimators  
  Ritabrata Dutta (University of Warwick)

**IS20. Heavy Tailed Phenomena**  
Organizer: Stilian A Stoev  
Chair: TBA

- Random linear functions of regularly varying vectors  
  Bikramjit Das (Singapore University of Technology and Design)  
- Power laws and weak convergence of the Kingman coalescent  
  Henrik Hult (KTH Royal Institute of Technology)  
- Limit theorems for topological invariants of extreme sample cloud  
  Takashi Owada (Purdue University)

**IS33. Integrable Probability**  
Organizer: Tomohiro Sasamoto  
Chair: TBA

- Reversing nonequilibrium systems  
  Leonid Petrov (University of Virginia)  
- Mapping KPZ models to free fermions at positive temperature  
  Takashi Imamura (Chiba University)  
- Relaxation time limit of TASEP on a ring  
  Jinho Baik (University of Michigan)

**OCS01. Coulomb Gases**  
Organizer: Paul Jung  
Chair: Paul Jung

- Outliers for Coulomb gases  
  David Garcia-Zelada (Aix-Marseille University)  
- Edge behaviors of 2D Coulomb gases with boundary confinements  
  Seong-Mi Seo (Korea Institute for Advanced Study)  
- Large deviations in the quantum quasi-1D jellium  
  Christian Hirsch (University of Groningen)  
- Lemniscate ensembles with spectral singularities  
  Sung-Soo Byun (Seoul National University)

**OCS14. Multivariate and Object-Oriented Data Analysis**  
Organizer: Cheolwoo Park  
Chair: Cheolwoo Park

- Bayesian Spatial Binary Regression for Label Fusion in Structural Neuroimaging  
  Andrew Brown (Clemson University)  
- Convex clustering analysis for histogram-valued data
Monday, July 19.

- Cheolwoo Park (Korea Advanced Institute of Science and Technology (KAIST))
  - A geometric mean for multivariate functional data
  Juhyun Park (ENSIIE)
  - A confidence region for the elastic shape mean of planar curves
  Justin Strait (University of Georgia)

**OCS22. Recent Progress of Statistical Inference for Economics and Social Science**
Organizer: Eun Ryung Lee
Chair: Eun Ryung Lee

- A Spline-Based Modeling Approach for Time-Indexed Multilevel Data
  Eun Ryung Lee (Sungkyunkwan University)
- Impulse Response Analysis for Sparse High-Dimensional Time Series
  Carsten Trenkler (University of Mannheim)
- Revealing Cluster Structures Based on Mixed Sampling Frequencies: With an Application to the State-Level Labor Markets
  Yeonwoo Rho (Michigan Technological University)
- Semiparametric efficient estimators in heteroscedastic error models
  Mijeong Kim (Ewha Womans University)

**CS01. Stochastic Partial Differential Equations**
Chair: Kunwoo Kim

- The stochastic Fisher-KPP equation with dormancy and on/off-branching-coalescing Brownian motion
  Florian Nie (TU Berlin)
- A sobolev space theory for SPDEs with space-time nonlocal operators
  Junhee Ryu (Korea University)
- Improved Stability for Linear SPDEs Using Mixed Boundary/Internal Controls
  Dan Goreac (University Shandong Weihai, China and University Gustave Eiffel, France)
- Law of the large numbers and Central limit theorems for stochastic heat equations
  Kunwoo Kim (Pohang University of Science and Technology)
- The stochastic heat equation with Lévy noise: Existence, Moments and Intermittency
  Carsten Chong (Columbia University)

**CS06. Various Aspects of Diffusion Processes**
Chair: Insuk Seo

- On nonlinear filtering of jump diffusions
  Fabian Germ (University of Edinburgh)
- Uniqueness and superposition of the distribution-dependent Zakai equations
  Huijie Qiao (Southeast University)
- Quadratic variation and quadratic roughness
  Purba Das (University of Oxford)
- Eyring-Kramers formula for non-reversible metastable diffusion processes
  Jungkyoung Lee (Seoul National University)

**CS18. Inference on Dependence**
Chair: Minsun Song

- Spherical principal curves
  Jongmin Lee (Seoul National University)
- Simultaneous confidence band for stationary covariance function of dense functional data
  Jiangyan Wang (Nanjing Audit University)
Monday, July 19.

- Covariance Networks for Functional Data on Multidimensional Domains
  Soham Sarkar (Ecole Polytechnique Federale de Lausanne)
- Large Dimensional Sample Covariance Matrices with Independent Columns and Diagonalizable Simultaneously Population Covariance Matrices
  Tianxing Mei (The University of Hong Kong)
- Random Surface Covariance Estimation by Shifted Partial Tracing
  Tomas Masak (EPFL)

CS25. Time Series Analysis I
Chair: Kyongwon Kim

- Statistical Modelling of Rainfall Time Series using Ensemble Empirical Mode Decomposition and Generalised Extreme Value Distribution
  Willard Zvarevashe (University of Zululand)
- Regularity of multifractional moving average processes with random Hurst exponent
  Fabian Mies (RWTH Aachen University)
- High-frequency instruments and identification-robust inference for stochastic volatility models
  Md. Nazmul Ahsan (Concordia University)

CS32. Spatio-temporal Data Analysis
Chair: Seoncheol Park

- Statistical Inference for Mean Function of Longitudinal Imaging Data over Complicated Domains
  Jie Li (Tsinghua University)
- GAUSSIAN LINEAR DYNAMIC SPATIO-TEMPORAL MODELS AND TIME ASYMPTOTICS
  Suman Guha (Presidency University, Kolkata)
- High-Dimensional Spectral Analysis
  Jonas Krampe (University of Mannheim)
- Extreme value analysis for mixture models with heavy-tailed impurity
  Ekaterina Morozova (HSE University)

CS36. Stochastic Process / Modeling
Chair: Jaehong Jeong

- Ruin probabilities in the presence of risky investments and random switching
  Konstantin Borovkov (The University of Melbourne)
- Wasserstein convergence rates for random bit approximations of continuous Markov processes
  Thomas Kruse (University of Giessen)
- The discrete membrane model on trees
  Biltu Dan (Indian Institute of Science)
- On a two-server queue with consultation by main server with protected phases of service
  Resmi Thekkinyedath (KKTM Government College)

22:30 - 23:00 KST

IS10. Change-point Problems for Complex Data
Organizer: Claudia Kirch
Chair: TBA

- Two-sample tests for relevant differences in the eigenfunctions of covariance operators
  Alexander Aue (UC Davis)
- Multiple change point detection under serial dependence
  Haeran Cho (University of Bristol)
- An Asymptotic Test for Constancy of the Variance in a Time Series
Monday, July 19.

Herold Dehling (Ruhr-University Bochum)

**IS13. Critical Phenomena in Statistical Mechanics Models**
Organizer: Akira Sakai
Chair: TBA

- Recent results for critical lattice models in high dimensions
  Mark Holmes (University of Melbourne)
- Near-critical avalanches in 2D frozen percolation and forest fires
  Pierre Nolin (City University of Hong Kong)
- Quenched and annealed Ising models on random graphs.
  Cristian Giardinà (Modena & Reggio Emilia University)

**IS15. Privacy**
Organizer: Angelika Rohde
Chair: TBA

- TBA
  John Duchi (Stanford University)
- Sequentially interactive versus non-interactive local differential privacy: estimating the quadratic functional
  Lukas Steinberger (University of Vienna)
- Gaussian Differential Privacy
  Weijie Su (University of Pennsylvania)

**IS24. Random Planar Geometries**
Organizer: Nina Holden
Chair: TBA

- Markovian infinite triangulations
  Thomas Budzinski (ENS Lyon)
- Rotational invariance in planar FK-percolation
  Ioan Manolescu (Université de Fribourg)
- Brownian half-plane excursions, CLE_4 and critical Liouville quantum gravity
  Ellen Powell (Durham University)

**OCS04. Interacting Particle Systems and Inclusion Process**
Organizer: Cristian Giardinà
Chair: Cristian Giardinà

- Metastability in the reversible inclusion process
  Sander Dommers (University of Hull)
- Metastability in the reversible inclusion process II: Toward the characterization of the relaxation time.
  Alessandra Bianchi (Università di Padova)
- Condensation and Metastability of General Inclusion Processes
  Seonwoo Kim (Seoul National University)
- Condensation of SIP particles and sticky Brownian motion
  Gioia Carinci (Università di Modena e Reggio Emilia)
- Condensed phase structure in Inclusion processes
  Watthanan Jatuviriyapornchai (Faculty of Science, Mahidol University)

**OCS26. Recent Advances in Network Learning: Theory and Practice**
Organizer: Kyoungjae Lee
Chair: Kyoungjae Lee
Monday, July 19.

- Scalable Bayesian high-dimensional local dependence learning
  Kyoungjae Lee (Inha University)
- Fast and flexible estimation of effective migration surfaces
  Woosok Ha (UC Berkeley)
- Statistical Inference for Cluster Trees
  Jisu Kim (Inria)
- Autologistic Network Model on Binary Data for Disease Progression Study
  Yei Eun Shin (National Cancer Institute)

CS05. Potential Theory in Probability Theory
Chair: Panki Kim

- Heat contents for time-changed killed Brownian motions
  Hyunchul Park (SUNY New Paltz)
- Heat kernel bounds for nonlocal operators with singular kernels
  Kyung-Youn Kim (National Chengchi University)
- The full characterization of the expected supremum of infinitely divisible processes
  Rafal Martynek (University of Warsaw)

CS15. Advanced Stochastic Processes
Chair: Jaehun Lee

- On the renewal theorem for maxima on trees
  Zbigniew Palmowski (Wroclaw University of Science and Technology)
- A multi-species ehrenfest process and its diffusion approximation
  Serena Spina (University of Salerno)
- Limit theorems for the realised semicovariances of multivariate Brownian semistationary processes
  Yuan Li (Imperial College London)
- A Yaglom type asymptotic result for subcritical branching Brownian motion with absorption
  Jiaqi Liu (University of California, San Diego)

CS23. Bayesian Inference
Chair: Seongil Jo

- Bayesian and stochastic modeling of polysomnography data from children using pacifiers for improved estimation of the apnea-hypopnea index
  Sujay Datta (University of Akron (Ohio))
- Asymmetric prior in wavelet shrinkage
  Alex Rodrigo dos Santos Sousa (University of Sao Paulo)
- Semiparametric Bayesian Regression Analysis of Multi-Typed Matrix-variate Responses
  Inkoo Lee (Florida State University)
- Bayesian Phylogenetic Inference of Stochastic Block Models on Infinite Trees
  Wenjian Liu (Queensborough Community College, CUNY)

CS35. Novel Statistical Approaches In Genetic Association Analyses
Chair: Saurabh Ghosh

- An Extended Model for Phylogenetic Maximum Likelihood based on Discrete Morphological Characters
  David Spade (University of Wisconsin--Milwaukee)
- Combined Linkage and Association Mapping Integrating Population-based And Family-Based Designs Using Multinomial Regression
  Saurabh Ghosh (Indian Statistical Institute)
- An alternative to intersection-union test for the composite null hypothesis used to identify shared genetic risk of disease outcomes
Monday, July 19.

Debashree Ray (Johns Hopkins University)
- Efficient SNP-based Heritability Estimation using Gaussian Predictive Process in Large-scale Cohort Studies
  Saonli Basu (University of Minnesota)
- Data-adaptive groupwise test for genomic studies via the Yanai’s generalized coefficient of determination
  Masao Ueki (Nagasaki University)

CS38. Statistical Inference
Chair: Mijeong Kim

- Efficient Estimation of population mean for scrambled responses using auxiliary information in the presence of measurement error and non-response
  Muhammad Nouman Qureshi (National College of Business Administration and Economics)
  Taeho Kim (University of Haifa)
- Moments of the doubly truncated selection elliptical distributions: recurrence, existence and applications
  Christian Galarza Morales (Escuela Superior Politécnica del Litoral)
- Characterization of Probability Distributions by a Generalized Notion of Sufficiency and Fisher Information
  Atin Gayen (Indian Institute of Technology Palakkad, India)
Tuesday, July 20.
*All times are KST (UTC+9)

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<thead>
<tr>
<th>Time</th>
<th>IMS Medallion Lecture</th>
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<tbody>
<tr>
<td>09:00 - 10:00</td>
<td>Gambler's ruin problems</td>
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<td>Laurent Saloff-Coste (Cornell University)</td>
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<td>Chair: TBA</td>
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<td>10:00 - 11:00</td>
<td>Simplicity and complexity of belief-propagation</td>
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<td>Elchanan Mossel (MIT)</td>
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<td>Chair: TBA</td>
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**IS04. Mathematical Population Genetics and Computational Statistics**
Organizer: Paul Jenkins
Chair: TBA
- TBA
  - Graham Coop (University of California at Davis)
- TBA
  - Barbara Engelhardt (Princeton University)
- Fitting stochastic epidemic models to gene genealogies using linear noise approximation
  - Vladimir Minin (University of California, Irvine)

**IS18. Deep Learning**
Organizer: Johannes Schmidt-Hieber
Chair: TBA
- Dynamics and phase transitions in deep neural networks
  - Yasaman Bahri (Google Research)
- Theoretical understanding of adding noises to deep generative models
  - Yongdai Kim (Seoul National University)
- Adversarial Examples in Random Deep Networks
  - Peter Bartlett (University of California at Berkeley)

**OCS07. Anomalous Diffusions and Related Topics**
Organizer: Zhen-Qing Chen
Chair: Zhen-Qing Chen
- $L^p$-Kato class measures for symmetric Markov processes under heat kernel estimates
Tuesday, July 20.

- Kazuhiro Kuwae (Fukuoka University)
  - Green function estimates and Boundary Harnack principles for non-local operators whose kernels degenerate at the boundary
- Panki Kim (Seoul National University)
  - Heat kernel upper bounds for symmetric Markov semigroups
  - Jian Wang (Fujian Normal University)
  - Inverse local time of one-dimensional diffusions and its comparison theorem
  - Lidan Wang (Nankai University)
- Archimedes' principle for ideal gas
  - Krzysztof Burdzy (University of Washington)

OCS17. The Advances in Time Series and Spatial Statistics
Organizer: Wei-Ying Wu
Chair: Wei-Ying Wu

- Interpretable, predictive spatio-temporal models via enhanced Pairwise Directions Estimation
  - Shengli Tzeng (National Sun Yat-sen University)
- Model selection with a nested spatial correlation structure
  - Chun-Shu Chen (National Central University)
- Consistent Order Selection for ARFIMA Models
  - Kun Chen (Southwestern University of Finance and Economics)
- Whittle Likelihood for Irregularly Spaced Spatial Data
  - Soutir Bandyopadhyay (Colorado School of Mines)

OCS24. Advanced Statistical Methods for Complex Data
Organizer: Jongho Im
Chair: Seung Hwan Park

- On the verifiable identification condition in NMAR missing data analysis
  - Kosuke Morikawa (Osaka University and The University of Tokyo)
- Bayesian Hierarchical Spatial Model for Small-area Estimation with Non-ignorable Nonresponses and Its Application to the NHANES Dental Caries Data
  - Ick Hoon Jin (Yonsei University)
- Raking-based relabeling classification method for highly imbalanced data
  - Seunghwan Park (Kangwon National University)
- Imputation approach for outcome dependent sampling design
  - Jongho Im (Yonsei University)

CS26. Time Series Analysis II
Chair: Joungyoun Kim

- Robust Bayesian Analysis of Multivariate Time Series
  - Yixuan Liu (The University of Auckland)
- Posterior consistency for the spectral density of non-Gaussian stationary time series
  - Yifu Tang (The University of Auckland)
- ARMA Models for Zero Inflated Count Time Series
  - Vurukonda Sathish
- Time-series Data Clustering via Thick Pen Transformation
  - Minji Kim (Seoul National University)

Poster I-1.

- Robust GMM-SMOTE using Mahalanobis Distance
  - Seung Jee Yang (Hanyang University)
Tuesday, July 20.

- Exact inference for an exponential parameter under generalized progressive type II hybrid censored competing risk data
  Subin Cho (Daegu University)
- Meta-analysis methods for multiple related markers: Applications to microbiome studies with the results on multiple $\alpha$-diversity indices
  Hyunwook Koh (The State University of New York, Korea)
- Estimation for a nonlinear regression model with non-zero mean errors and an application to a biomechanical model
  Hojun You (Seoul National University)
- Neural network-based clustering for ischemic stroke patients
  Su Hoon Choi (Chonnam National University)
- Principal Component Analysis of Amplitude and Phase Variation in Multivariate Functional Data
  Soobin Kim (Seoul National University)
- Clustering Non-stationary Advanced Metering Infrastructure Data
  Donghyun Kang (Chung-Ang University)

19:00 - 20:00 KST

**Levy Lecture**

A variational method for Euclidean quantum fields
Massimiliano Gubinelli (University of Bonn)
Chair: TBA

20:00 - 21:00 KST

**Doob Lecture**

Parking on Cayley trees and Frozen Erdős-Rényi
Nicolas Curien (Université Paris-Sud Orsay)
Chair: TBA

21:30 - 22:00 KST

**IS16. Bootstrap for High-dimensional Data**
Organizer: Kengo Kato
Chair: TBA

- Inference for nonlinear inverse problems
  Vladimir Spokoinyi (WIAS and HU Berlin)
- Change point analysis for high-dimensional data
  Xiaohui Chen (University of Illinois at Urbana-Champaign)
- Bootstrap test for multi-scale lead-lag relationships in high-frequency data
  Yuta Koike (University of Tokyo)

**IS27. Random Matrices and Related Fields**
Organizer: Manjunath Krishnapur
Chair: TBA

- The scaling limit of the characteristic polynomial of a random matrix at the spectral edge
  Elliot Paquette (McGill University)
Tuesday, July 20.

- Strong Asymptotics of Planar Orthogonal Polynomials: Gaussian Weight Perturbed by Finite Number of Point Charges
  Seung Yeop Lee (University of South Florida)
- Secular coefficients and the holomorphic multiplicative chaos
  Joseph Najnudel (University of Bristol)

**IS28. Statistical Inference for Graphs and Networks**
Organizer: Betsy Ogburn
Chair: TBA

- A goodness-of-fit test for exponential random graphs
  Gesine Reinert (University of Oxford)
- Networks in the Presence of Informative Community Structure
  Alexander Volfovsky (Duke University)
- Motif Estimation via Subgraph Sampling: The Fourth-Moment Phenomenon
  Bhaswar Bhattacharya (University of Pennsylvania)

**IS31. Information Theory and Concentration Inequalities**
Organizer: Chandra Nair
Chair: TBA

- Algorithmic Optimal Transport in Euclidean Spaces
  Salman Beigi (Institute for Research in Fundamental Sciences (IPM))
- Entropy bounds for discrete log-concave distributions
  Sergey Bobkov (University of Minnesota)
- Entropy and Convex Geometry
  Tomasz Tkocz (Carnegie Mellon University)

**OCS12. Recent Developments for Dependent Data**
Organizer: Mikyoung Jun
Chair: Mikyoung Jun

- DeepKriging: Spatially Dependent Deep Neural Networks for Spatial Prediction
  Ying Sun (KAUST)
- A model-free subsampling method based on minimum energy criterion
  Wenlin Dai (Renmin University of China)
- Global wind modeling with transformed Gaussian processes
  Jaehong Jeong (Hanyang University)
- Threshold Estimation for Continuous Three-Phase Polynomial Regression Models with Constant Mean in the Middle Regime
  Chih-Hao Chang (National University of Kaohsiung)

**OCS16. Non-Euclidean Statistical Inference**
Organizer: Young Kyung Lee
Chair: Young Kyung Lee

- Functional linear regression model with randomly censored data: predicting conversion time to Alzheimer’s disease
  Seong Jun Yang (Jeonbuk National University)
- Deconvolution estimation on hyperspheres
  Jeong Min Jeon (KU Leuven)
- Confidence band for Persistent Homology of KDEs
  Jisu Kim (Inria)
- Analysis of chemical-gene bipartite network via a user-based collaborative filtering method incorporating chemical structure information
  Namgil Lee (Kangwon National University)
Tuesday, July 20.

CS02. Financial Mathematics and Probabilistic Modeling
Chair: Hyungbin Park

- How to detect a salami slicer: a stochastic controller-stopper game with unknown competition
  Kristoffer Lindensjö (Stockholm University)
- Solving the selection-recombination equation: Ancestral lines and duality
  Frederic Alberti (Bielefeld University)
- Short Time Asymptotics for Modulated Rough Stochastic Volatility Models
  Barbara Pacchiarotti (Università degli studi di Roma “Tor Vergata”)

CS07. SDEs and Fractional Brownian Motions
Chair: Ildoo Kim

- Ruin probability with mixed fractional Brownian motion
  Chunhao Cai (Shanghai University of Finance and Economics)
- Averaging Principles for Mixed Fast-Slow Systems Driven by Fractional Brownian Motion
  Bin Pei (Fudan University and Kyushu University)
- Weak rough-path type solutions for singular Lévy SDEs
  Helena Katharina Kremp (Freie Universität Berlin)
- Functional limit theorems for approximating irregular SDEs, general diffusions and their exit times
  Mikhail Urusov (University of Duisburg-Essen)

CS20. Detection and Prediction
Chair: Minsu Park

- Some theoretical comments regarding the run-length properties of Statistical Process Control (SPC) monitoring schemes: Zero-state vs. Steady-state
  Marien Alet Graham (University of Pretoria)
- Changepoint analysis to identify the effect for shorebirds from the fox eradication program in Philip Island using citizen science data
  Udani Abhisheka Wijewardhana
- Change Point Detection under Linear Model: Use of MOSUM Approach
  Joonpyo Kim (Seoul National University)
- Interval-censored least-squares regressions
  Taehwa Choi (Korea University)

CS29. Neural Networks
Chair: Kwonsang Lee

- Simulated Annealing-Backpropagation Algorithm on Parallel Trained Maxout Networks (SABPMAX) in Detecting Credit Card Fraud
  Sheila Mae Golingay (University of the Philippines-Diliman)
- Analysis of two mechanisms of telomere maintenance based on the theory of G-Networks and Stochastic Automata Networks
  Kyung Hyun Lee (The University of Texas Health Science Center at Houston)
- The Smoking Gun: Statistical Theory Improves Neural Network Estimates
  Sophie Langer (Technische Universität Darmstadt)
- Scaling Properties of Deep Residual Network
  Renyuan Xu (University of Oxford)
- Stochastic block model for multiple networks
  Tabea Rebafka (Sorbonne Université)
Tuesday, July 20.

**Poster I-2.**
- Geometrically Adapted Langevin Algorithm (GALA) for Markov Chain Monte Carlo (MCMC) Simulations
  Mariya Mamajiwala (University College London)
- Bayes estimation for the Weibull distribution under generalized adaptive hybrid progressive censored competing risks data
  Yeongjae Seong (Daegu University)
- Asymptotic results for certain first-passage times and areas of renewal processes
  Claudio Macci (Università di Roma Tor Vergata)
- Large deviations of mean-field interacting particle systems in a fast varying environment
  Sarath Yasodharan (Indian Institute of Science)
- Stochastic homogenisation of Gaussian fields
  Leandro Chiarini (Utrecht University)
- Concentration inequality for U-statistics for uniformly ergodic Markov chains, and applications
  Quentin Duchemin (LAMA, Univ Gustave Eiffel, CNRS, Marne-la-Vallée, France)
- A Bayesian illness-death model to approach the incidence of recurrent hip fracture and death in elderly patients
  Fran Llopis-Cardona (Foundation for the Promotion of Health and Biomedical Research of Valencia Region (FISABIO))
- The contact process with two types of particles and priority: metastability and convergence in infinite volume
  Mariela Pentón Machado (Instituto de Matemática e Estatística, Universidade de São Paulo)
- A nonparametric instrumental approach to endogeneity in competing risks models
  Jad Beyhum (ORSTAT, KU Leuven)

**22:30 - 23:00 KST**

**IS02. Scaling Limits of Disordered Systems and Disorder Relevance**
Organizer: Rongfeng Sun
Chair: TBA

- Exceptional geodesic pairs in the directed landscape
  Erik Bates (University of Wisconsin-Madison)
- Disorder relevance and the continuum random field Ising model
  Adam Bowditch (University College Dublin)
- A CLT for KPZ on torus
  Yu Gu (Carnegie Mellon University)

**IS07. High-dimensional Robustness**
Organizer: Stanislav Minsker
Chair: TBA

- Distribution-Free Robust Linear Regression
  Nikita Zhivotovskiy (ETH Zurich)
- Algorithmic High-Dimensional Robust Statistics
  Ilias Diaconicolas (University of Wisconsin-Madison)
- Robust estimation of a mean vector with respect to any norm : a minimax MOM and a Stahel-Donoho Median of means estimators
  Guillaume Lecué (Laboratoire de statistiques at CREST)

**IS08. Functional Data Analysis**
Organizer: Aurore Delaigle
Chair: TBA

- Partially Specified Covariance Operators and Intrinsically Functional Graphical Models
  Victor Panaretos (EPFL)
Tuesday, July 20.

- Domain selection for functional linear models: a dynamic RKHS approach  
  Jane Ling Wang (University of California at Davis)
- TBA  
  Alois Kneip (University of Bonn)

IS32. Statistical Learning  
Organizer: Yichao Wu  
Chair: TBA

- TBA  
  Jelena Bradic (University of California at San Diego)
- A Forward Approach for Sufficient Dimension Reduction in Binary Classification  
  Seung Jun Shin (Korea University)
- TBA  
  Zhou Yu (East China Normal University)

IS41. Bernoulli Paper Prize Session  
Chair: TBA

- From infinite random matrices over finite fields to square ice  
  Leonid Petrov (University of Virginia)
- A general frequency domain method for assessing spatial covariance structures  
  Soutir Bandyopadhyay (Colorado School of Mines)

OCS06. Theoretical Analysis of Random Graphs and Clustering  
Organizer: Ji Oon Lee  
Chair: Ji Oon Lee

- Spectral large deviations for sparse random matrices  
  Kyeongsik Nam (University of California, Los Angeles)
- Robust Hypergraph Clustering via Convex Relaxation of Truncated MLE  
  Hye Won Chung (Korea Advanced Institute of Science and Technology (KAIST))
- Local law and Tracy-Widom limit for sparse stochastic block models  
  Ji Oon Lee (Korea Advanced Institute of Science and Technology (KAIST))
- Convergence rate to the Tracy-Widom laws for the largest eigenvalue of Wigner matrices  
  Kevin Schnelli (KTH Royal Institute of Technology)
- Attributed Graph Alignment  
  Lele Wang (University of British Columbia)

OCS13. Recent Advances in Complex Time Series Analysis  
Organizer: Haeran Cho  
Chair: Haeran Cho

- Change points detection for high dimensional time series  
  Likai Chen (Washington University in Saint Louis)
- Asymptotics of Large Autocovariance Matrices  
  Monika Bhattacharjee (Indian Institute of Technology Bombay)
- Factor Models for Matrix-Valued High-Dimensional Time Series  
  Xialu Liu (San Diego State University)
- Multi-level Changepoint Inference for Periodic Data Sequences  
  Anastasia Ushakova (Lancaster University)
Tuesday, July 20.

### CS10. Reflecting Diffusion Processes Stochastic Networks and Their Applications
Organizer: Amber Puha
Chair: Ruth J. Williams

- Measure Valued Processes Characterized by a Field of Reflecting Brownian Motions Arising from Certain Queuing Problems
  Amarjit Budhiraja (University of North Carolina)
- Asymptotic Behavior of a Critical Fluid Model for Bandwidth Sharing with General File Size Distributions
  Yingjia Fu (University of California San Diego)
- Error Bounds for the One-Dimensional Constrained Langevin Approximation for Density Dependent Markov Chains
  Felipe Campos (University of California, San Diego)
- Obliquely reflecting diffusions in nonsmooth domains: Some new uniqueness results
  Cristina Costantini (University of Chieti-Pescara)

### CS16. Probability Theory and Statistical Mechanics
Chair: HyunJae Yoo

- Coexistence of localized Gibbs measures and delocalized gradient Gibbs measures on trees
  Florian Henning (Ruhr-University Bochum)
- Inhomogeneous gradient Gibbs measures on regular trees with homogeneous interactions
  Christof Kuelske (Ruhr-University Bochum)
- Statistical mechanical model of adsorption at the surface interface contacting with an ideal gas
  Changho Kim (University of California, Merced)

### CS19. Detection and Segmentation
Chair: Myung Hee Lee

- Detection of outliers in compositional data on disabled people in the São Paulo State
  Paulo Oliveira (University of São Paulo)
- Change detection through sequential testing in point processes controlled by data-dependent intensities
  Moinak Bhaduri (Bentley University)
- Multiscale Quantile Segmentation
  Laura Jula Vanegas (University of Göttingen)
- Consistent change-point detection for general distributions
  Florencia Leonardi (University of São Paulo)

### CS24. Bayesian Nonparametric Inference
Chair: Kyoungjae Lee

- Bernstein - von Mises type theorem for a scale hyperparameter in Bayesian nonparametric inference
  Natalia Bochkina (University of Edinburgh)
- Convergence of unadjusted Hamiltonian Monte Carlo for mean-field models
  Katharina Schuh (University of Bonn)
- Nonparametric Bayesian volatility estimation for gamma-driven stochastic differential equations
  Peter Spreij (University of Amsterdam)
- Hamiltonian Monte Carlo in high dimensions
  Andreas Eberle (University of Bonn)
Wednesday, July 21.

*All times are KST (UTC+9)

09:00 - 10:00 KST

**Laplace Lecture**

Transfer Learning: Optimality and adaptive algorithms
Tony Cai (University of Pennsylvania)
Chair: TBA

10:00 - 11:00 KST

**Public Lecture**

Structure and Randomness in Data
Young-Han Kim (UCSD and Gauss Labs Inc.)
Chair: TBA

11:30 - 12:00 KST

**IS05. Recent Advances in Shape Constrained Inference**
Organizer: Bodhisatva Sen
Chair: TBA

- Global rates of convergence in mixture density estimation
  Arlene Kyoung Hee Kim (Korea University)
- Convex Regression in Multidimensions
  Adityanand Guntuboyina (University of California Berkeley)
- Multiple isotonic regression: limit distribution theory and confidence intervals
  Qiyang Han (Rutgers University)

**IS06. Optimization in Statistical Learning**
Organizer: Garvesh Raskutti
Chair: TBA

- TBA
  Rebecca Willett (University of Chicago)
- Statistical inference on latent network growth processes using the PAPER model
  Min Xu (Rutgers University)
- Adversarial Classification, Optimal Transport, and Geometric Flows
  Nicolas Garcia Trillos (University of Wisconsin-Madison)

**OCS09. Random Matrices and Infinite Particle Systems**
Organizer: Hirofumi Osada
Chair: Hirofumi Osada

- Dynamical Universality for Random Matrices
  Hirofumi Osada (Kyushu University)
Wednesday, July 21.

- Signal Processing via the Stochastic Geometry of Spectrogram Level Sets
  Subhroshekhar Ghosh (National University of Singapore)
- Logarithmic derivatives and local densities of point processes arising from random matrices
  Shota Osada (Kyushu University)
- Stochastic differential equations for infinite particle systems of jump type with long range interactions.
  Hideki Tanemura (Keio university)

OCS18. Advanced Learning Methods for Complex Data Analysis
Organizer: Xinlei Wang
Chair: Xinlei Wang

- Peel Learning for Pathway-Related Outcome Prediction
  Rui Feng (University of Pennsylvania)
- Principal boundary for data on manifolds
  Zhigang Yao (National University of Singapore)
- Probabilistic Semi-supervised Learning via Sparse Graph Structure Learning
  Li Wang (University of Texas at Arlington)
- Bayesian Modeling For Paired Data In Genome-Wide Association Studies With Application To Breast Cancer
  Min Chen (University of Texas at Dallas)

OCS27. Bayesian Inference for Complex Models
Organizer: Joungyoun Kim
Chair: Joungyoun Kim

- Nonparametric Bayesian latent factor model for multivariate functional data with covariate dependency
  Yeonseung Chung (Korea Advanced Institute of Science and Technology (KAIST))
- Bayesian Model Selection for Ultrahigh -Dimensional Doubly-Intractable Distributions
  Jaewoo Park (Yonsei University)
- Post-Processed Posteriors for Banded Covariances
  Kwangmin Lee (Seoul National University)
- Adaptive Bayesian inference for current status data on a grid
  Minwoo Chae (Pohang University of Science and Technology)

OCS28. Recent advances in Time Series Analysis
Organizer: Changryoung Baek
Chair: Changryoung Baek

- Resampling long-range dependent time series
  Shuyang Bai (University of Georgia)
- Robust test for structural instability in dynamic factor models
  Changryong Baek (Sungkyunkwan University)
- On scaling in high dimensions
  Gustavo Didier (Tulane University)
- Cotrending: testing for common deterministic trends in varying means model
  Marie Duker (Cornell University)
- Thresholding and graphical local Whittle estimation
  Vladas Pipiras (University of North Carolina at Chapel Hill)

CS31. Spatial Data Analysis
Chair: Yaeji Lim

- Extremal kriging for extremal quantile metamodelling
  Heelang Ryu (Korea Advanced Institute of Science and Technology (KAIST))
Wednesday, July 21.

- Wild bootstrap for high-dimensional spatial data
  Daisuke Kurisu (Tokyo Institute of Technology)
- Lifting Scheme for Streamflow Data in River Networks
  Seoncheol Park (Chungbuk National University)
- Optimal designs for some bivariate cokriging models
  Subhadra Dasgupta (IITB-Monash Research Academy)

**Poster II-1.**

- Nonconstant Error Variance in Generalized Propensity Score Model
  Doyoung Kim (Sungkyunkwan University)
- Causal Mediation Analysis with Multiple Mediators of General Structures
  Youngho Bae (Sungkyunkwan University)
- A fuzzy clustering ensemble based Mapper algorithm
  SungJin Kang (Chung-Ang University)
- Analysis of the Association between Suicide Attempts and Meteorological factors.
  Seunghyeon Kim (Chonnam National University)
- Spectral Clustering with the Wasserstein distance and its Application
  SangHun Jeong (Pusan National University)
- Robust covariance estimation for partially observed functional data
  Hyunsung Kim (Chung-Ang University)
- Fast Bayesian Functional Regression for Non-Gaussian Spatial Data
  Yeo Jin Jung (Yonsei University)

19:00 - 20:00 KST

**Wald Lecture 2**

Low dimensional random fractals
Martin Barlow (University of British Columbia)
Chair: TBA

20:00 - 21:00 KST

**IMS Medallion Lecture**

Random determinants and the elastic manifold
Gerard Ben Arous (New York University)
Chair: TBA

21:30 - 22:00 KST

**IS01. Conformal Invariance and Related topics**
Organizer: Hao Wu
Chair: TBA

- Asymptotics of determinants of discrete Laplacians
  Konstantin Izyurov (University of Helsinki)
- On Loewner evolutions with jumps
  Eveliina Peltola (Rheinische Friedrich-Wilhelms-Universität Bonn)
Wednesday, July 21.

- Extremal distance and conformal radius of a CLE_4 loop
  Titus Lupu (CNRS / Sorbonne Université)

**IS14. Optimal Transport**
Organizer: Philippe Rigollet
Chair: TBA

- Density estimation and conditional simulation using triangular transport
  Youssef Marzouk (Massachusetts Institute of Technology)
- Estimation of Wasserstein distances in the Spiked Transport Model
  Jonathan Niles-Weed (Courant Institute of Mathematical Sciences, New York University)
- TBA
  Quentin Paris (Higher School of Economics)

**IS21. Probabilistic Theory of Mean Field Games**
Organizer: Xin Guo
Chair: TBA

- Portfolio Liquidation Games with Self-Exciting Order Flow
  Ulrich Horst (Humboldt University Berlin)
- A Mean-Field Game Approach to Equilibrium Pricing in Renewable Energy Certificate Markets
  Sebastian Jaimungal (University of Toronto)
- Entropic Optimal Transport
  Marcel Nutz (Columbia University)

**IS35. Stochastic Analysis in Mathematical Finance and Insurance**
Organizer: Marie Kratz
Chair: TBA

- From signature based models in finance to affine and polynomial processes and back
  Christa Cuchiero (University of Vienna)
- Optimal dividends with capital injections at a level-dependent cost
  Ronnie Loeffen (University of Manchester)
- Exponential Lévy-type change-point models in Mathematical Finance
  Lioudmila Vostrikova (University of Angers)

**IS40. KSS Invited Session: Nonparametric and Semi-parametric Approaches in Survival Analysis**
Organizer: Woncheol Jang
Chair: TBA

- Smoothed quantile regression for censored residual lifetime
  Sangwook Kang (Yonsei University)
- Superefficient estimation of future conditional hazards based on marker information
  Enno Mammen (Heidelberg University)
- On a Semiparametric Estimation Method for AFT Mixture Cure Models
  Ingrid Van Keilegom (KU Leuven)

**OCS03. Gaussian Processes**
Organizer: Naomi Feldheim
Chair: Naomi Feldheim

- Gaussian determinantal processes: A new model for directionality in data
  Subhro Ghosh (National University of Singapore)
Wednesday, July 21.

- Persistence Exponents of Gaussian Stationary Functions
  Ohad Noy Feldheim (Hebrew University of Jerusalem)
- Connectivity of the excursion sets of Gaussian fields with long-range correlations
  Stephen Muirhead (University of Melbourne)
- Overcrowding estimates for the nodal volume of stationary Gaussian processes on $\mathbb{R}^d$
  Lakshmi Priya (Indian Institute of Science)

OCS20. Theories and Applications for Complex Data Analysis
Organizer: Arlene K.H. Kim
Chair: Arlene K.H. Kim

- Partly interval-censored rank regression
  Sangbum Choi (Korea University)
- Two-sample testing of high-dimensional linear regression coefficients via complementary sketching
  Tengyao Wang (University College London)
- Optimal rates for independence testing via U-statistic permutation tests
  Tom Berrett (University of Warwick)
- Empirical Bayes PCA in high dimensions
  Zhou Fan (Yale University)

CS13. Random Structures
Chair: Namgyu Kang

- On Entropy of Ribbon Tilings
  Vladislav Kargin (Binghamton University, SUNY)
- Universal phenomena for random constrained permutations
  Jacopo Borga (University of Zurich)
- The scaling limit of the strongly connected components of a uniform directed graph with an i.i.d. degree sequence
  Serte Donderwinkel (University of Oxford)

CS21. Copula Modeling
Chair: Daewoo Pak

- Construction of a copula estimator through recursive partitioning of the unit hypercube
  Oskar Laverny (Université Lyon 1 - SCOR SE)
- Copula-Based Markov Zero-Inflated Count Time Series Models
  Mohammed Alqawba (Qassim University)
- Forecasting risk measure for energy commodity and its assessment of accuracy
  Khreshna Syuhada (Institut Teknologi Bandung)
- Bi-factor and second-order copula models for item response data
  Sayed H. Kadhem (University of East Anglia)

CS27. Multivariate Data Analysis
Chair: Yunjin Choi

- Multiple comparisons on generalized treatment effects in parallel trials with multiple diagnostic responses
  Shu-Hui Lin (Taichung University of Science and Technology)
- A nonparametric test for paired data
  Grzegorz Wylepek (Institute of Mathematics, University of Wroclaw)
- Inference for Generalized Multivariate Analysis of Variance (GMANOVA) models, under Multivariate Skew t distribution for modelling skewed and heavy-tailed data
  Sayantee Jana (Indian Institute of Management Nagpur)
CS33. Statistical Prediction
Chair: Changwon Lim

- Some shrinkage and penalty estimators in gamma regression model
  Akram Mahmoudi
- Robust Geodesic Regression
  Ha-Young Shin (Seoul National University)
- A multi-sigmoidal logistic model: statistical analysis and first-passage-time application
  Paola Paraggio (Università degli Studi di Salerno (UNISA))
- Statistical inference for functional linear problems
  Tim Kutta (Ruhr University Bochum)

IS03. Potential Theory for Non-local Operators and Jump Processes
Organizer: Panki Kim
Chair: TBA

- SDEs driven by multiplicative stable-like Levy processes
  Zhen-Qing Chen (University of Washington)
- Periodic homogenization of non-symmetric Lévy-type processes
  Takashi Kumagai (Kyoto University)
- Optimal Hardy identities and inequalities for the fractional Laplacian on $L^p$
  Krzysztof Bogdan (Wroclaw University of Science and Technology)

IS12. Statistics for Data with Geometric Structure
Organizer: Sungkyu Jung
Chair: TBA

- Wasserstein Regression
  Hans-Georg Müller (University of California, Davis)
- Finite Sample Smeariness for Fréchet Means
  Stephan Huckemann (Georg-August-Universitaet Goettingen)
- Score matching for microbiome compositional data
  Janice Scealy (Australian National University)

IS25. Random Graphs
Organizer: Christina Goldschmidt
Chair: TBA

- An unexpected phase transition for percolation on scale-free networks
  Souvik Dhara (Massachusetts Institute of Technology)
- Random Cayley Graphs
  Jonathan Hermon (University of British Columbia)
- Recent results for the graph alignment problem
  Marc Lelarge (INRIA)

IS36. Problems and Approaches in Multi-Armed Bandits
Organizer: Vianney Perchet
Chair: TBA
Wednesday, July 21.

- Dynamic Pricing and Learning under the Bass Model
  Shipra Agrawal (Columbia University)
- TBA
  Csaba Szepesvari (Deepmind & University of Alberta)
- TBA
  Alessandro Lazaric (Facebook AI Research)

OCS05. Topics on Random Walks
Organizer: Perla Sousi
Chair: Perla Sousi

- The four-dimensional uniform spanning tree
  Thomas Hutchcroft (University of Cambridge)
- Covering a graph with independent walks
  Jonathan Hermon (University of British Columbia)
- Minkowski content for the scaling limit of loop-erased random walk in three dimensions
  Xinyi Li (Peking University)

OCS29. Sequential Analysis and Applications
Organizer: Alexander Tartakovsky
Chair: Alexander Tartakovsky

- Asymptotically optimal control of FDR and related metrics for sequential multiple testing
  Jay Bartroff (University of Southern California)
- Nearly Optimal Sequential Detection of Signals in Correlated Gaussian Noise
  Grigory Sokolov (Xavier University)
- A unified approach for solving sequential selection problems
  Yaakov Malinovsky (University of Maryland)
- Sequential Change Detection by Optimal Weighted $l_2$ Divergence
  Yao Xie (Georgia Institute of Technology)
- Detection of Temporary Disorders
  Michael Baron (American University)

CS03. Numerical Study of Stochastic Processes
Chair: Guebin Choi

- Splitting methods for SDEs with locally Lipschitz drift. An illustration on the FitzHugh-Nagumo model
  Massimiliano Tamborrino (University of Warwick)
- Simulation methods for trawl processes
  Dan Leonte (Imperial College London)
- Stochastic optimal control of SDEs and importance sampling
  Han Cheng Lie (University of Potsdam)

CS08. Study of Various Distributions
Chair: Gunwoong Park

- Some Modifications to Weibull Class Survival Distributions
  Kabiru Abidemi Awopeju (Nnamdi Azikiwe University)
- The alpha power Marshall-Olkin-G distribution: properties, and applications
  Joseph Thomas Eghwerido (Federal University of Petroleum Resources, Effurun)
- Orlicz norm and concentration inequalities for beta-heavy tailed distributions
  Emmanuel Gobet (Ecole Polytechnique)
- The Dickman-Goncharov distribution
  Vladimir Panov (HSE University)
Wednesday, July 21.

Continuous scaled phase-type distributions
Jorge Yslas (University of Bern)

CS12. Optimal Transport
Chair: Yeonwoo Rho

- Stochastic-Uniform-Approximations of Wasserstein barycenters
  Florian Heinemann (Georg-August-University Göttingen)
- Measuring dependence between random vectors via optimal transport
  Johan Segers (UCLouvain)
- Transportation duality and reverse functional inequalities for Markov kernels
  Nathaniel Eldredge (University of Northern Colorado)

CS28. Machine Learning / Structural Equation
Chair: Yoonsuh Jung

- Replicability of statistical findings under distributional shift
  Suyash Gupta (Stanford University)
- Multiscale Representation of Directional Scattered Data: Use of Anisotropic Radial Basis Functions
  Junhyeon Kwon (Seoul National University)
- Selection of Graphical Continuous Lyapunov Models with Lasso
  Philipp Dettling (Technical University of Munich)
- Identifiability of linear structural equation models with homoscedastic errors using algebraic matroids
  Jun Wu (Technical University of Munich)
- Convergence of Stochastic Gradient Descent for Lojasiewicz-Landscapes
  Sebastian Kassing (Westfälische Wilhelms-Universität Münster)

Poster Session II-2.

- Sufficient conditions for existence of stationary distribution in cells with telomere length maintenance
  Kyung Hyun Lee (The University of Texas Health Science Center at Houston)
- A Bayesian Nonparametric Approach to Super-Resolution Single-Molecule Localization
  Mariano Gabitto (Simons Foundation)
- A Bayesian Multivariate Microeconometric Model for Estimation of Price Elasticity of Demand
  Juan Padilla (Grupodot)
- A Bayesian Stochastic Diffusion Process Approach for Modeling the Behavior of CD4+ T Cell Count
  Istoni Da Luz Sant’Anais (University of Puerto Rico)
- Busemann process and semi-infinite geodesics in Brownian last-passage percolation
  Evan Sorensen (University of Wisconsin-Madison)
- Application of Kernel Mean Embeddings to Functional Data
  George Wynne (Imperial College London)
- SI/R-based examination of the policy effects on the COVID-19 spread in U.S.
  David Han (The University of Texas at San Antonio)
- Cross-validation Confidence Intervals for Test Error
  Alexandre Bayle (Harvard University)
- Comparison of quantile regression curves under different settings with censored data
  Lorenzo Tedesco (KU Leuven)
Thursday, July 22.

*All times are KST (UTC+9)

09:00 - 10:00 KST

**IMS Medallion Lecture**

Selective inference for trees  
Daniela Witten (University of Washington)  
Chair: TBA

10:00 - 11:00 KST

**IMS Medallion Lecture**

High-dimensional interpolators: From linear regression to neural tangent models  
Andrea Montanari (Stanford University)  
Chair: TBA

11:30 - 12:00 KST

**IS38. IMS Lawrence D. Brown Ph.D. Student Award Session**  
Chair: TBA

- Efficient Manifold Approximation with Spherelets  
  Didong Li (Princeton University / University of California)
- Toward instance-optimal reinforcement learning  
  Ashwin Pananjady (Georgia Institute of Technology)
- Bayesian Pyramids: Identifying Interpretable Discrete Latent Structures from Discrete Data  
  Yuqi Gu (Columbia University)

**OCS11. Random Growth Spatial Processes and Related Models**  
Organizer: Erik Bates  
Chair: Erik Bates

- Holes in first-passage percolation  
  Wai-Kit Lam (University of Minnesota)
- The contact process on random graphs  
  Danny Nam (Princeton University)
- Coalescence estimates for the corner growth model with exponential weights  
  Xiao Shen (University of Wisconsin-Madison)
- Scaling limits of sandpiles  
  Ahmed Bou-Rabee (University of Chicago)

**OCS19. Recent Advances in Complex Data Analysis**  
Organizer: Seung Jun Shin  
Chair: Seung Jun Shin

- Kernel Density Estimation and Deconvolution under Radial Symmetry
Thursday, July 22.

- Kwan-Young Bak (Korea University)
  Penalized poly gram regression for bivariate smoothing
- Jae-Hwan Jhong (Chungbuk National University)
  Penalized logistic regression using functional connectivity as covariates with an application to mild cognitive impairment
- Eunjee Lee (Chungnam National University)
  Resmax: Detecting voice spoofing attacks with residual network and max filter map
- Il-Youp Kwak (Chung-Ang University)
  Weighted Validation of Heteroscedastic Regression Models for Better Selection
- Yoonsuh Jung (Korea University)
  Bayesian Nonparametric Adjustment of Confounding
  Chanmin Kim (SungKyunKwan University)
- Multivariate Point Process Models for Microbiome Image Analysis
  Kyu Ha Lee (Harvard University)
- Look before you leap: systematic evaluation of tree-based statistical methods in subgroup identification
  Xiaojing Wang (University of Connecticut)
- Statistical test of structured continuous trees embedded in high-dimentional noisy data
  Lin Wan (Academy of Mathematics and Systems Science, CAS)

OCS25. Recent Advances in Biostatistics
Organizer: Sangwook Kang
Chair: Sangwook Kang

- Bayesian Nonparametric Adjustment of Confounding
  Chanmin Kim (SungKyunKwan University)
- Multivariate Point Process Models for Microbiome Image Analysis
  Kyu Ha Lee (Harvard University)
- Look before you leap: systematic evaluation of tree-based statistical methods in subgroup identification
  Xiaojing Wang (University of Connecticut)
- Statistical test of structured continuous trees embedded in high-dimentional noisy data
  Lin Wan (Academy of Mathematics and Systems Science, CAS)

OCS31. BOK Contributed Session: Finance and Contemporary Issues
Organizer: BOK Economic Statistics Department
Chair: TBA

- Multi-step Reflection Principle and Barrier Options
  Seongjoo Song (Korea University)
- Change point analysis in Bitcoin return series: a robust approach
  Junmo Song (Kyungpook National University)
- A self-normalization test for correlation matrix change
  Ji Eun Choi (Pukyong National University)
- Volatility as a risk measure of financial time series : high frequency and realized volatility
  Sun Young Hwang (Sookmyung Women's University)

Poster III-1.

- A penalized matrix normal mixture model for clustering matrix data
  Jinwon Heo (Chonnam National University)
- Univariate and multivariate normality tests using an entropy-based transformation
  Shahzad Munir (Xiamen University)
- Geum River Network Data Analysis via Weighted PCA
  Seeun Park (Seoul National University)
- Cauchy Combination Test with Thresholding Under Arbitrary Dependency Structures
  Junsik Kim (Seoul National University)
- Control charts for monitoring linear profiles in the detection of network intrusion
  Daeun Kim (Dankook University)
- Benefits of International Agreements as Switching Diffusions
  Sheikh Shahnawaz (California State University)
- Estimation of Hilbertian Varying Coefficient Models
  Hyerim Hong (Seoul National University)
- Duality for a class of continuous-time reversible Markov models
  Freddy Palma (Fundación Universidad de las Américas Puebla, Mexico)
Thursday, July 22.

- Statistical Analysis of Mini-batch Gradient Descent Estimators
  Haobo Qi (Peking University, China)

19:00 - 20:00 KST

Blackwell Lecture

Estimating the mean of a random vector
Gabor Lugosi (Pompeu Fabra University)
Chair: TBA

20:00 - 21:00 KST

Tukey Lecture

Max-margin classification and other interpolation methods
Sara van de Geer (ETH Zurich)
Chair: TBA

21:30 - 22:00 KST

IS09. Quantum Statistics
Organizer: Cristina Butucea
Chair: TBA

- Estimation of quantum state and quantum channel
  Masahito Hayashi (Southern University of Science and Technology)
- Information geometry and local asymptotic normality for quantum Markov processes
  Madalin Guta (University of Nottingham)
- Optimal Adaptive Strategies for Sequential Quantum Hypothesis Testing
  Marco Tomamichel (National University of Singapore)

IS22. Random Trees
Organizer: Anita Winter
Chair: TBA

- 1d Brownian loop soup, Fleming-Viot processes and Bass-Burdzy flow
  Elie Aidekon (Fudan University)
- A new state space of algebraic measure trees for stochastic processes
  Wolfgang Lohr (University of Duisburg-Essen)
- Scaling Limits of critical rank-1 inhomogeneous random graphs
  Minmin Wang (University of Sussex)

IS29. High Dimensional Data Inference
Organizer: Florentina Bunea
Chair: TBA

- Minimax rates for derivative-free stochastic optimization with higher order smooth objectives
  Alexandre Tsybakov (CREST, ENSAE, IP Paris)
- High-dimensional, multiscale online changepoint detection
  Richard Samworth (University of Cambridge)
Thursday, July 22.

- Optimal Transport and Inference for Stationary Processes
  Andrew Nobel (The University of North Carolina at Chapel Hill)

IS34. Random Walks on Random Media
Organizer: Alexander Drewitz
Chair: TBA

- Random walk on a barely supercritical branching random walk
  Jan Nagel (TU Dortmund)
- Universality of cutoff for graphs with an added random matching
  Perla Sousi (Cambridge University)
- Invariance Principle for a Random Walk Among a Poisson Field of Moving Traps
  Rongfeng Sun (National University of Singapore)

IS37. Bernoulli Society New Researcher Award Session
Chair: TBA

- Hydrodynamic large deviations of strongly asymmetric interacting particle systems
  Li-Cheng Tsai (Rutgers University)
- Conformal loop ensembles on Liouville quantum gravity with marked points
  Nina Holden (ETH Zurich)
- Integrability of Schramm-Loewner evolution and Liouville quantum gravity
  Xin Sun (University of Pennsylvania)

OCS08. Rough Path Theory
Organizer: Ilya Chevyrev
Chair: Ilya Chevyrev

- Rough Path Theory and the Stochastic Loewner Equation
  Vlad Margarint (NYU Shanghai)
- Rough path with jumps and its application in homogenization
  Huilin Zhang (Fudan University)
- Probabilistic rough paths
  William Salkeld (Universite Cote d’Azur)
- Transport and continuity equations with (very) rough noise
  Nikolas Tapia (Weierstrass Institute / TU Berlin)
- Rough walks in random environment
  Tal Orenshtein (TU Berlin, WIAS Berlin)

OCS21. Recent Advances in Statistics
Organizer: Yunjin Choi
Chair: Yunjin Choi

- Identifiability of Additive Noise Models Using Conditional Variances
  Gunwoong Park (University of Seoul)
- Multivariate functional group sparse regression: functional predictor selection
  Jun Song (University of North Carolina at Charlotte)
- Causal foundations for fair and responsible machine learning
  Joshua Loftus (London School of Economics)
- Network change point detection
  Yi Yu (University of Warwick)
Thursday, July 22.

**CS09. Topics Related to RMT**
Chair: Kyeongsik Nam

- On eigenvalue distributions of large auto-covariance matrices
  Wangjun Yuan (The University of Hong Kong)
- Linear spectral statistics of sequential sample covariance matrices
  Nina Dörnemann (Ruhr University Bochum)
- Couplings for Andersen Dynamics and Related Piecewise Deterministic Markov Processes
  Nawaf Bou-Rabee (Rutgers University Camden)

**CS11. Topics Related to KPZ Universality**
Chair: Jaehoon Kang

- Upper tail decay of KPZ models with Brownian initial conditions
  Balint Veto (Budapest University of Technology and Economics)
- Bijective matching between q-Whittaker and periodic Schur measures.
  Matteo Mucciconi (Tokyo Institute of Technology)
- A new approach to KPZ models by determinantal and Pfaffian measures
  Tomohiro Sasamoto (Tokyo Institute of Technology)

**CS22. Dimension Reduction and Model Selection**
Chair: Jisu Kim

- Dynamical system approach to sparse factor analysis with MCP likelihood estimation
  Jeannifer Bingco (University of the Philippines)
- Probabilistic Principal Curves on Riemannian Manifolds
  Seungwoo Kang (Seoul National University)
- The Elastic Information Criterion for Multicollinearity Detection
  Kimon Ntotsis (University of the Aegean)
- A bidimensional shock model driven by the space-fractional Poisson process
  Alessandra Meoli (Università degli Studi di Salerno)

**CS37. Financial Data Analysis**
Chair: Jae Youn Ahn

- Hedging Portfolio for a Degenerate Market Model
  ihsan demirel (Koç University)
- Revenue Management and Pricing Models in a Best-of-n Series in Sports
  Shubhabrata Das (Indian Institute of Management Bangalore)
- An Optimal Combination of Proportional - Excess of loss Reinsurance with Random Premiums
  Suci Sari (Statistics Research Division, Faculty of Mathematics and Natural Sciences, Institut Teknologi Bandung)
- A Novel Inventory Policy For Imperfect Items With Stock Dependent Demand Rate
  Praveen V P

22:30 - 23:00 KST

**IS11. Analysis of Dependent Data**
Organizer: Chae Young Lim
Chair: TBA

- Statistical Learning with Spatially Dependent High-dimensional Data
Thursday, July 22.

- Taps Maiti (Michigan State University)
  - Large-Scale Spatial Data Science with ExaGeoStat
  - Multivariate spatio-temporal Hawkes process models of terrorism
    Mikyoung Jun (University of Houston)

**IS19. Randomized Algorithms**
Organizer: Devdatt Dubhashi
Chair: TBA

- Is your distribution in shape?
  Ronitt Rubinfeld (Massachusetts Institute of Technology)
- Beyond Independent Rounding: Strongly Rayleigh Distributions and Traveling Salesperson Problem
  Shayan Oveis Gharan (University of Washington)
- A Survey of Dependent Randomized Rounding
  Aravind Srinivasan (University of Maryland, College Park)

**IS23. Stochastic Partial Differential Equations**
Organizer: Leonid Mytnik
Chair: TBA

- Phase Analysis for a family of Stochastic Reaction-Diffusion Equations
  Carl Mueller (Korea Advanced Institute of Science and Technology (KAIST))
- Regularization by noise for SPDEs and SDEs: a stochastic sewing approach
  Oleg Butkovsky (Weierstrass Institute)
- Stochastic quantization, Large N, and mean field limit
  Hao Shen (University of Wisconsin-Madison)

**IS26. Pathwise Stochastic Analysis**
Organizer: Hendrik Weber
Chair: TBA

- Sig-Wasserstein Generative models to generate realistic synthetic time series
  Hao Ni (University College London)
- State space for the 3D stochastic quantisation equation of Yang-Mills
  Ilya Chevyrev (University of Edinburgh)
- TBA
  Scott Smith (Chinese Academy of Science)

**OCS10. Random Conformal Geometry and Related Fields**
Organizer: Nam-Gyu Kang
Chair: Nam-Gyu Kang

- Loewner Dynamics for the Multiple SLE(0) Process
  Tom Alberts (The University of Utah)
- Conformal field theory for annulus SLE
  Sung-Soo Byun (Seoul National University)
- Convergence of Martingale Observables in the Massive FK-Ising Model
  S. C. Park (Korea Institute of Advanced Study)
- Boundary Minkowski content of multi-force-point SLE\(\_x(\rho)\) curves
  Dapeng Zhan (Michigan State University)
- Schramm-Loewner evolution in high dimensions: convergence on Hartogs domains
  Andrej Srakar (Institute for Economic Research (IER) and University of Ljubljana)
Thursday, July 22.

OCS30. Stochastic Adaptive Optimization Algorithms and their Applications to Neural Networks
Organizer: Miklos Rasonyi
Chair: Sotirios Sabanis

- An adaptive strong order 1 method for SDEs with discontinuous drift coefficient
  Larisa Yaroslavtseva (University of Passau)
- Nonconvex optimization via TUSLA with discontinuous updating
  Ying Zhang (Nanyang Technological University)
- Approximation of stochastic equations with irregular drifts
  Konstantinos Dareiotis (University of Leeds)
- Neural SDEs: Deep Generative Models in the Diffusion Limit
  Maxim Raginsky (University of Illinois at Urbana-Champaign)
- Diffusion approximations and control variates for MCMC
  Eric Moulines (Ecole Polytechnique)

CS04. Simulations of Stochastic Processes
Chair: Yeonwoo Rho

- Exact pathwise simulation of multi-dimensional Ornstein-Uhlenbeck processes
  Hugo de la Cruz (FGV-Fundação Getulio Vargas)
- Parameter Estimation for Weakly Interacting Particle Systems and Stochastic McKean-Vlasov Processes
  Louis Sharrock (Imperial College London)
- Gull’s proof of Bell’s theorem: the impossible distributed computing simulation project
  Richard Gill (Mathematical Institute, Leiden University)

CS14. Stochastic Interacting Systems
Chair: Kyung-Youn Kim

- Opinion dynamics with Lotka-Volterra type interactions
  Michele Aleandri (LUISS University)
- Effect of influence in voter models and its application in detecting frauds in an election
  Rishideep Roy (IIM Bangalore)
- Modified Macdonald polynomials and a multispecies totally asymmetric zero range process
  Olya Mandelshtam (University of Waterloo)

CS17. Various Limit Theorems
Chair: Chi Tim Ng

- Limit Theorems for Non-stationary Strongly Mixing Random Fields
  Cristina Tone (University of Louisville)
- On the law of the iterated logarithm and strong invariance principles in stochastic geometry
  Johannes Krebs (Heidelberg University)
- CLT for cyclic long-memory processes
  Andriy Olenko (La Trobe University)
- Functional limit theorems for U-statistics
  Mikolaj Kasprzak (University of Luxembourg)
- Proving Liggett’s FCLT via Stein’s method
  Wasamon Jantai (Oregon State University)

CS30. Deep Learning
Chair: Jong-June Jeon

- Deep neural networks for Faster nonparametric regression models
Thursday, July 22.

- Statistical Inference with M-Estimators on Bandit Data
  Mehmet Ali Kaygusuz (The Middle East Technical University)
- Generative model for fbm with deep ReLU neural networks
  Kelly Zhang (Harvard University)
- Modelling count outcome data in mobile-Health applications based on multi-armed bandits
  Michael Allouche (Ecole Polytechnique)
- A multistate joint model for interval-censored event-history data subject to within-unit clustering and informative missingness, with application to neurocysticercosis research
  Nina Deliu (University of Cambridge)

CS34. Statistical Modeling and Prediction
Chair: Eun Jeong Min

- An evolution of the beta regression for non-monotone relations
  Hongbin Zhang (The City University of New York)
- Robust censored regression with l1-norm regularization
  Gloria Gheno (Ronin Institute)
- SPLVC Modal Regression with Error-Prone Linear Covariate
  Jad Beyhum (ORSTAT, KU Leuven)
- Regularized Double Machine Learning in Partially Linear Models with Unobserved Confounding
  Tao Wang (University of California, Riverside)
- A multistate joint model for interval-censored event-history data subject to within-unit clustering and informative missingness, with application to neurocysticercosis research
  Corinne Emmenegger (ETH Zurich)
Friday, July 23.

*All times are KST (UTC+9)

<table>
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<th>Time</th>
<th>Event</th>
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| 09:00 - 10:00 | Schramm Lecture
                Balloons in space(s)
                Omer Angel (University of British Columbia)
                Chair: TBA                                                      |
| 10:00 - 11:00 | Kolmogorov Lecture
                From algorithm to theorem
                Persi Diaconis (Stanford University)
                Chair: TBA                                                      |
| 19:00 - 20:00 | Wald Lecture 3
                Higher dimensional spaces
                Martin Barlow (University of British Columbia)
                Chair: TBA                                                      |
| 20:00 - 21:00 | Presentation of the Inaugural Willem van Zwet Medal and Closing Remarks
                Claudia Klüppelberg
                Chair: TBA                                                      |