



NORDSTAT2014

TURKU, FINLAND

Conference booklet for the
25th Nordic Conference in
Mathematical statistics
June 2-6 2014



TURKU BRAIN AND MIND CENTER



Scandinavian Journal of Statistics
Turku School of Economics
Support Foundation



FEDERATION OF FINNISH LEARNED SOCIETIES

WELCOME TO TURKU AND NORDSTAT2014!

It is a great pleasure to welcome you to the 25th Nordic Conference in Mathematical Statistics, NORDSTAT2014, being held at the campus of University of Turku. Nordstat is a biennial international meeting organized by the Nordic and Baltic countries. The first conference was held in 1965 and the host of Nordstat has been alternating between the Nordic and Baltic countries. Turku was the host in 1988 and now we are happy to see that Nordstat takes place in Turku again. This time the conference brings together over 150 researchers, teachers and students from over dozen countries to discuss recent developments in statistics and probability.

The scientific program covers diverse areas of theoretic and applied research in statistics and probability theory. The programme committee, together with the Scandinavian Journal of Statistics, has worked hard to put together the invited programme with the traditional SJS lecture, one keynote speaker and six other invited speakers as well as about 30 speakers in the nine invited theme sessions. In addition to that, there are about 75 contributed talks and posters representing nice theoretical results as well as a wide spectrum of exciting applied work.

The Local Organizing Committee has done some hard work putting the detailed time-schedule together, booking venues for the conference and social events. The city of Turku is situated by the Aura River at the southwest coast of Finland and is regarded as the oldest city in the country, dating back to the 13th century. The historic city is located between the Turku Castle guarding the river mouth and the Cathedral near the old market square. The academic history of the city started in the year 1640, when the Royal Academy of Turku was founded. Nowadays, over 15000 students attend the modern University of Turku making it the second largest university in Finland.

We are grateful to the Department of Mathematics and Statistics and the Faculty of Mathematics and Natural Sciences of the University of Turku and Åbo Akademi for providing the great venue for the conference in the heart of Turku. We also acknowledge SJS, the Federation of Finnish Learned Societies, Turku School of Economics Support Foundation, SAS, Springer, Åbo Akademi, the City of Turku, for their financial and other support. We hope the conference encourages research cooperation between Nordic and Baltic researchers working on statistics and probability theory, and the social programme provides plenty of opportunities for informal discussions and fun. Thank you for attending Nordstat to share your expertise with us.

Tervetuloa Turkuun! Welcome to Turku!

Sincerely yours,

Henri Pesonen
Chair of the
Organizing committee

Hannu Oja
Chair of the
Scientific Programme
Committee

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1 Scientific Programme

Conference schedule

NORDSTAT2014, CONFERENCE PROGRAM, 29.05.2014

CSX: 15 + 5 minutes

ISX: 25 + 5 minutes

Lecture halls: Pub2 (ground floor), Pub3 (ground floor), Pub4 (1st floor), Pub5 (2nd floor)

MONDAY June 2, afternoon

14:00-15:30 (Pub3) SJS lecture I: Søren Johansen and Bent Nielsen, The asymptotic analysis of some robust methods, including the Huber-skip, the Forward Search and the Impulse Indicator Saturation algorithm

16:00-17:00 (Pub3) Invited speaker A : Marc Hallin, R-Estimation for asymmetric independent component analysis (chair: Hannu Oja)

16:00-17:00

CS1: (Pub4) State-space models and dynamic modeling (chair: Antti Penttinen)

- Marko Laine, Modelling trends in climatic time series using the state space approach
- Zeytu G. Asfaw, A Simulation Study of Statistical Inference in Non-homogeneous Poisson Processes with Emphasis on Frailty and Dynamic Behavior

CS2: (Pub2) Econometrics (chair: Heikki Kauppi)

- Paul Catani, Wild bootstrap tests for autocorrelation in vector autoregressive models
- Agnieszka Jach, Subsampling inference for the autocorrelations of GARCH processes
- Gunnar Rosenqvist, Indirect estimation of a simultaneous limited dependent variable model for patient costs and outcome

17:30- (Lobby) Reception

TUESDAY June 3, morning

09:00-10:30 (Pub3) SJS lecture II: Søren Johansen and Bent Nielsen, The asymptotic analysis of some robust methods, including the Huber-skip, the Forward Search and the Impulse Indicator Saturation algorithm with discussant Elvezio Ronchetti

11:00-12:40

IS1: (Pub3) Dimension Reduction and ICA (chair: Klaus Nordhausen)

- Frank Critchley, Invariant coordinate selection revisited: Fisher symmetry and symmetric component analysis
- Jari Miettinen, Fourth moments and independent component analysis
- David Matteson, Independent component analysis via distance covariance

IS2: (Pub2) Survey Sampling and Official Statistics (chair: Risto Lehtonen)

- Piet Daas, Big Data as a data source for official statistics
- Reijo Sund, Solutions for using sensitive microdata in international register-based studies
- Carl-Erik Särndal, New challenges for the interaction between survey sampling theory and official statistics

CS3: (Pub4) Statistical inference I (chair: Jana Jureckova):

- Rolf Larsson, Confidence distributions and nuisance parameters
- Silvelyn Zwanzig, Variable selection with generalized SimSel methods
- Tom Britton, On expected durations for branching and other birth-death type processes
- Mohamed Y. Hassan, Modeling correlated durations and their marks jointly using mixture transition models

CS4: (Pub5) Other applications (chair:Lauri Mehtätalo)

- Virpi Junttila, Regularized spatial Bayesian principal component regression for forest inventory
- Dana Sylvan, Estimation and visualization of quantile surfaces in flexible space-time settings
- Salme Kärkkäinen, Calibration of predictions for a new individual with an application to energy expenditure and smart shorts data
- Horst Lewitschnig, Area scaling of failure probabilities for semiconductor devices
- Ragnar B. Huseby, Estimating dynamic roadway travel times

TUESDAY June 3, afternoon

14:00-15:00 (Pub3) Invited speaker B: Andrew Gelman, Can we use Bayesian methods to resolve the current crisis of unreplicable research? (chair: Aki Vehtari)

15:30-17:30

IS3: (Pub3) Bayesian analysis (chair: Aki Vehtari)

- Ole Winther, Non-parametric survival analysis in breast cancer using clinical and genomic markers
- Simo Särkkä, Rao-Blackwellized particle filtering for statistical estimation of large predator population
- Jarno Vanhatalo, Assessing the current status of Baltic grey seal population and predicting its future

IS4: (Pub2) Robust and nonparametric methods (chair: Sara Taskinen)

- Christophe Croux, Robust and sparse canonical correlation analysis
- Denis Larocque, Multivariate variance components tests for multi-level data
- Roland Fried, Robust and nonparametric shift detection in weakly dependent time series
- Somnath Datta, Robust estimation of marginal regression parameters in clustered data

IS5: (Pub4) Probability theory and stochastic processes (chair: Tommi Sottinen)

- Lauri Viitasaari, Integral representations with respect to Hölder processes
- Ehsan Azmoodeh, Generalization of the Nualart-Peccati criterion
- Lennart Bondesson, Hyperbolically Monotone Densities
- Andreas Anckar, The fine structure of the stationary distribution for a simple Markov chain

CS5: (Pub5) Medical applications and general linear models (chair: Tapio Nummi)

- Ingunn Fride Tvete, Risk of excessive Benzodiazepine redeeming over time: a nationwide observational study
- Ingunn Fride Tvete, A mixed treatment comparison analysis of drugs for treating patients with Rheumatoid arthritis
- Sören Möller, Methods for studying heritability of cancer diagnosis using twins
- Yasin Asar, On some biasing estimators for the logit model

14:00-18:00 (Lobby) Poster session I

- Adam Galuszka, Graphs, trees and forests as models of psychosocial factors
- Leena Pasanen, Scale space multiresolution analysis of time series
- Johan Fellman, Mathematical modelling of Lorenz curves
- Mārtiņš Liberts, Classification of network traffic with attacks
- Marcin Pacholczyk, Statistical potential based method for modeling and testing of NF- κ B binding sites
- Krzysztof Fajarewicz, Sensitivity of feature ranked lists for biological data
- Sebastian Student, Multiclass classification system for large-scale cancer genomics data

WEDNESDAY June 4, morning

09:00-10:00 (Pub3) Invited speaker C : John Aston, Some aspects of statistical neuroimaging (chair: Mervi Eerola)

10:30-12:30

IS6: (Pub2) Brain Imaging (chair: Mervi Eerola)

- Aki Vehtari, Some probabilistic models for brain signal analysis
- Henri Pesonen, Dynamic causal modelling
- Liu Jia, Data augmentation in Rician noise model and Bayesian Diffusion Tensor Imaging

IS7: (Pub4) Stochastic modeling (chair: Paavo Salminen)

- Takis Konstantopoulos, Asymptotics in ordered random graphs
- Aila Särkkä, Classification of mixtures of Strauss and Poisson point processes
- Jaakko Lehtomaa, On asymptotic scales of independently stopped random sums
- Yana Belopolskaya, Stochastic processes associated with cross-diffusion parabolic systems

CS6: (Pub3) Bayesian inference I (chair:Matti Vihola):

- Valeria Vitelli, Bayesian integration of genomic data
- Øystein Sørensen, Bayesian inference for the Mallows rank model
- Felix Rios, On generating directed acyclic graphs
- Zitong Li, Bayesian multiple regression methods for analyzing longitudinal genetic data
- Matti Vihola, On the efficiency of pseudo-marginal Markov chain Monte Carlo

CS7: (Pub5) Statistical inference II, sampling, surveys (chair: Carl-Erik Särndal):

- Risto Lehtonen, Small area estimation of poverty rate by model calibration and “hybrid” calibration
- Seppo Laaksonen, Bayesian and non-Bayesian multiple imputation with examples for a continuous variable
- Fredrik Olsson, Estimation of the variance effective population size in age-structured populations
- Raghunath Arnab, Improved estimation from ranked set sampling

WEDNESDAY June 4, afternoon

14:00- Cruise on the Steamship S/S Ukkopekka

THURSDAY June 5, morning

09:00-10:00 (Pub3) Invited speaker D: Pentti Saikkonen, A Gaussian mixture autoregressive model (chair: Heikki Kauppi)

10:30-12:30

IS8: (Pub2) Time series analysis (chair: Heikki Kauppi)

- Changli He, Smooth-transition cointegration
- Rickard Sandberg, Testing for a unit root in noncausal autoregressive models
- Moysiadis Theodoros, Binary and categorical time series models with feedback

IS9: (Pub5) Exit and stopping problems with applications (chair: Luis Alvarez)

- Brita Jung, Exit times for autoregressive processes with different distributions
- Sören Christensen, Optimal stopping of strong Markov processes on the real line
- Pekka Matomäki, On an optimal variance stopping problem
- Mikael Petersson, Asymptotic expansions for perturbed discrete time regenerative processes

CS8: (Pub3) Bayesian inference II (chair: Lasse Holmström):

- Sebastian Jobjörnsson, A Bayesian model for the selection of sample size in clinical trials
- Helgi Tómasson, A computational Bayesian approach to continuous-time-auto-regressive-moving-average (CARMA) models
- Petter Arnesen, Fully Bayesian binary Markov random field models: Prior specification and posterior simulation
- Fabio Divino, Lexis Random Fields Modeling in Mortality Surface Analysis
- Øyvind Hoveid, Using informative priors for approximate inference in non-linear Gaussian state space models

CS9: (Pub4) Statistical inference III (chair: Silvelyn Zwanzig):

- Juha Karvanen, Nonparametric estimation of nonlinear causal effects from incomplete observational data
- Jana Jureckova, Averaged Extreme Regression Quantile
- Søren Feodor Nielsen, Kernel density estimation with imputed group membership information
- Zaher Mohdeb, Testing the Equality of Nonparametric Regression Curves based on Fourier Coefficients
- Ülkü Erişoğlu, Percentile estimators for finite mixture distribution models

THURSDAY June 5, afternoon

14:00-15:00 (Pub3) Invited speaker E : Peter Bank, Stochastic convex envelopes and convex duality in singular control (chair: Paavo Salminen)

14:00-15:00

CS10: (Pub2) Multidimensional and high-dimensional models (chair: Jaakko Nevalainen)

- Murat Erişoğlu, Determining the number of clusters by multi dimensional scaling
- Tatjana Pavlenko, Optimal classification of high-dimensional data with sparsity patterns
- Måns Thulin, High-dimensional hypothesis testing using random subspaces

15:30-17:00 (Pub3) keynote speaker: Bing Li, Sufficient dimension reduction: An overview with discussant Hannu Oja

14:00-18:00 (Lobby) Poster session II - Student poster competition

- Zhe Chen, Pathwise stochastic integrals and Itô formula for multidimensional Gaussian processes
- Maria Yli-Heikkilä, Predicting profitability of dairy farms with a learning ensemble model
- Johanna Ärje, Some mathematical results on percent model affinity (PMA) index
- Juha Ala-Luhtala, Comparison of variational Bayes and classical SDE approximations for Bayesian smoothing in continuous-time stochastic systems with discrete-time
- Satu Helske, Clustering multidimensional life sequences with hidden Markov models
- Elina Numminen, When relationships get complex: a general unsupervised approach for the inference on ecological interactions between species
- Anna-Kaisa Ylitalo, Towards a less aggregate way of analyzing spatio-temporal eye movement data
- Mariana Pereira, Next generation gene finding: using conditional random fields to search for antibiotic resistance genes
- Jens Malmros, Respondent driven sampling and random walks on directed networks
- Mariia Romadanova, Probabilistic schemes of the Cauchy problem numerical solution for quasilinear parabolic equations
- Radka Sabolova, Tests for regression quantiles
- Viktor Jonsson, A Hierarchical Bayesian Model for Ranking of Genes in Metagenomics Based on Differential Abundance
- Viktor Jonsson, Evaluation of Statistical Methods for Comparative Metagenomics

- Per Westerlund, Grade Levels for Multiple-Choice Tests
- Maiju Kujala, Differential network analysis with multiply imputed lipidomic data
- Markus Matilainen, Blind source separation for some multivariate heteroscedastic time series models
- Sean Robinson, Computer Vision for 3D Stack Cellular Microscopy Images with Markov Random Fields
- Anannya Nath and Purba Mondal, Kaplan Meier estimator in multivariate setup and its robustness

19:00- conference dinner

FRIDAY June 6, morning

09:00-10:00 (Pub3) Invited speaker F: Henrik Hult, Rare-event simulation and Hamilton-Jacobi equations (chair: Luis Alvarez)

09:00-10:00

CS11: (Pub4) Analysis of multivariate data (chair: Juha Karvanen)

- Paolo Zanini, Multi-resolution analysis of EEG signals through Hierarchical Independent Component Analysis
- Rahul Mukherjee, Some inequalities on the spherically truncated multinormal distribution
- José Sánchez, Joint estimation of transcription networks and expression in cancer

CS12: (Pub2) Spatio-temporal models, spatial models with applications (chair: Aila Särkkä)

- Lasse Holmström, A spatio-temporal model for fossil pollen based reconstruction of the paleoclimate
- Lauri Mehtätalo, Estimation of stand density using aerial images: A forestry application of the boolean spatial model
- Henrike Häbel, Spatial statistical analysis of micro-structures of nano silica particle gels

10:30-12:00 (Pub3) keynote speaker: Bing Li, Sufficient dimension reduction: An overview with discussant Hannu Oja

2 List of sessions

Keynote speakers

SJS	Søren Johansen and Bent Nielsen (University of Copenhagen and University of Oxford , Robust methods for time series, discussant Elvezio Ronchetti), 2014 SJS lecture
Keynote	Bing Li (Penn State University, Dimension Reduction)

Invited speakers (chair)

A	Marc Hallin, ECARES, Brussels, <i>ICA</i> (Hannu Oja)
B	Andrew Gelman, Columbia University, <i>Bayesian analysis</i> (Aki Vehtari)
C	John Aston, University of Warwick, <i>Brain Imaging</i> (Mervi Eerola)
D	Pentti Saikkonen, University of Helsinki, <i>Time Series</i> (Heikki Kauppi)
E	Peter Bank, TU Berlin (Paavo Salminen)
F	Henrik Hult, Royal Institute of Technology, Stockholm (Luis Alvarez)

Invited theme sessions (chair)

	Session title	Authors
IS1	Dimension reduction and ICA (Klaus Nordhausen)	29, 34, 43
IS2	Survey sampling and Official Statistics (Risto Lehtonen)	40, 69, 87
IS3	Bayesian analysis (Aki Vehtari)	31, 39, 114
IS4	Robust and nonparametric methods (Sara Taskinen)	4, 59, 105, 112
IS5	Probability theory and stochastic processes (Tommi Sottinen)	28, 36, 62, 90
IS6	Brain imaging (Mervi Eerola)	46, 116
IS7	Stochastic modeling (Paavo Salminen)	33, 42, 58
IS8	Time series analysis (Heikki Kauppi)	16, 57, 64
IS9	Exit and stopping problems with applications (Luis Alvarez)	35, 49, 88, 96

Contributed paper sessions

	Session title (chair)	Authors
CS1	State-space models and dynamic modelling (Antti Penttinen)	5, 17, 70
CS2	Econometrics (Heikki Kauppi)	37, 51, 95
CS3	Statistical inference I (Jana Jureckova)	10, 13, 56, 66
CS4	Other applications (Lauri Mehtätalo)	3, 12, 41, 55, 74
CS5	Medical applications and generalized linear models (Tapio Nummi)	19, 20, 30, 47, 79
CS6	Bayesian inference I (Matti Vihola)	48, 86, 92, 94, 102
CS7	Statistical inference II (Carl-Erik Särndal), sampling, surveys	2, 67, 68, 108
CS8	Bayesian inference II (Lasse Holmström)	45, 50, 53, 71, 84
CS9	Statistical inference III (Silvelyn Zwanzig)	18, 21, 25, 27, 76
CS10	Multidimensional and high-dimensional models (Jaakko Nevalainen)	24, 78, 89
CS11	Analysis of multivariate data (Juha Karvanen)	1, 14, 15
CS12	Spatio-temporal models, spatial models with applications (Aila Särkkä)	6, 8, 32

Poster sessions

Session title	Authors
Poster Session I	22, 52, 60, 83, 93, 101, 103
Poster Session II	38, 63, 72, 73, 75, 77, 80, 81, 82, 85, 91, 97, 98, 100, 104, 109, 110, 115

3 Information for presenters

Oral presentation guidelines

We kindly ask presenters to follow the guidelines below in order to maintain the conference schedule and to ensure smooth transitions between presenters.

- send your presentation to the organizing committee prior to the conference. You can also take your presentation with you on a memory stick but please have it copied to the room computer **before the session**. A member of the organizers will help you with this
- have your presentation in either .pdf or .ppt format
- arrive to the session on time
- keep your presentation within the given time frame

- Invited session presentations: 25 min + 5 min
- Contributed session presentations: 15 min + 5 min
- take a seat in the front row of the room

In every session, there will be a member of the organizing committee to help you with the computer, projector and microphone. Any questions can be directed to the organizing committee.

Poster guidelines

Two poster sessions are organized, one on Tuesday and one on Thursday. The second session is planned to consist of student posters that take part in the poster competition. Presenters are kindly asked to have their posters on display at latest in the start of their designated session and remove them at the end of the session. We also ask, that the authors stand next to their posters during the coffee breaks to present their research. Materials to hang the posters will be supplied by the organizers. Posters should be at most A1 size in landscape orientation or A0 in portrait in order to fit in the frames. The organizing committee is not liable for posters that are not collected by the authors by the end of the conference. The best student poster is voted both by the audience and a jury, and the winner is announced at the conference dinner on Thursday.

4 General information and the venue

Conference venues

The main conference venues are tagged in the map below.

1) Publicum

The conference will be held in Publicum, a university building situated in the campus area, walking distance from the Turku city centre. The street address of the conference venue is Assistentinkatu 7.

2) Restaurant / beerhouse Koulu

Students' get-together will take place on Monday at the restaurant Koulu from 18:30 onwards. Everyone willing to participate can move there together straight after the welcome reception held at the Publicum.

3) Cruise on Ukko-Pekka -steamship

The cruise takes place on Wednesday afternoon at 14:00-18:00. Ukko-Pekka steamship will leave in front of the Restaurant Vaakahuoneen Paviljonki, by the Martinsilta bridge. The street address is Linnankatu 38.

4 GENERAL INFORMATION AND THE VENUE



Map of the main conference venues.

4) Conference dinner

The Conference dinner is held on Thursday at 19:00 in a beautifully renovated old factory building, Arken. The street address is Tehtaankatu 2.

Registration

Registration to Nordstat 2014 starts on Monday June 2 at 12:00. Registration desks can be found from the main entrance of Publicum (Assistentinkatu 7, ground floor). Name tags, conference material, programs, and city maps and guides are available. If you are arriving with luggage, the registration staff can store it securely.

Internet connections

Wireless Internet connections (eduroam and SparkNet) are available in Publicum and Educarium buildings. Eduroam allows students, researchers and staff from participating institutions to obtain Internet connectivity when vis-



Restaurant Koulu.



Steamship Ukko-Pekka.

iting other participating institutions. If you are not a member of participating eduroam institute, you can get a guest username and password for SparkNet from the registration desk or from a staff member at any time during the conference.

Coffee breaks

Coffee breaks are included in the conference fee. Coffee is served at the entrance hall of Publicum during the breaks. Coffee and snacks can also be purchased at any time from cafeteria Macciavelli located in Educarium (just next to Publicum).

Lunches

Lunches on Tuesday, Wednesday and Thursday are included in the conference fee. On Tuesday and Thursday, lunch is served at the Cafeteria Macciavelli. Some tables are reserved for participants of Nordstat2014. Lunch coupons are included in the conference material given at the registration. On Wednesday, a light lunch is served at the entrance hall of the Publicum, as the cruise with extensive dinner takes place in the afternoon.

Free time

Organization committee has gathered a map including the nicest restaurants, cafes, bars, sights and jogging routes. If you fancy a drink or a cozy dinner on a warm summer eve, just browse through our recommendations in the map. You can find the map behind this link:

https://mapsengine.google.com/map/edit?mid=zfRyf0GF_Syc.k-57cZf7uuIU

5 Social Programme

All events are included in the registration fee.

MONDAY June 2 - Reception and student get-together

Conference reception, 17:30 at Publicum No prior registration required

The conference reception is held at 17:30 in the lobby of the conference building Publicum. A glass of sparkling wine and some light snack will be served.

Students get together, 18:30 at Koulu, Eerikinkatu 18 No prior registration required

The reception is followed by a students get together at the Brewery restaurant Koulu (Finnish for “School”) in the city, where we have a space reserved from 18:30 onwards. This old school building from 1889 now houses a functioning brewery that also serves food in addition to their own beers and ciders. No formal agenda has been planned except a tricky pub quiz and free drink vouchers to all participants! All young or young-minded researchers are welcome to join us at the pub, however we have to prioritise students due to the lack of space.

WEDNESDAY June 4 - S/S Ukkopekka

Cruise on the Steamship Ukkopekka, 14:00-18:00, Linnankatu 38, by the Martinsilta bridge. Prior registration required

S/S Ukkopekka built in 1938 is the last steamship still regularly operating the Finnish seas. After enjoying the starters onboard, Ukkopekka will take us to a small island in the Finnish archipelago called Loistokari where we are welcomed by a buffet of traditional Finnish seafood and other delicacies from the grill. The island also offers a chance to take a peek into the old light house keeper’s facilities. It is always colder in the archipelago than in the mainland so dressing appropriately is recommended. In the case of bad weather, the main course is also served aboard the ship.

THURSDAY June 5 - Conference dinner**Conference dinner, 19:00, Tehtaankatu 2
Prior registration required**

The Conference dinner is served in the beautifully renovated old factory building, Arken by the river. This building dates back to the 19th century and now houses the faculty of arts of the Åbo Akademi University.

6 Committees**Scientific Programme Committee**

Hannu Oja, University of Turku (chair)
Mervi Eerola, University of Turku
Luis Alvarez Esteban, University of Turku
Heikki Kauppi, University of Turku
Jaakko Nevalainen, University of Turku
Paavo Salminen, Åbo Akademi

Local Organizing Committee

Henri Pesonen, University of Turku (chair)
Ilmari Ahonen, University of Turku
Matti Heikkonen, University of Turku
Noora Kartiosuo, University of Turku
Maiju Kujala, University of Turku
Markus Matilainen, University of Turku

7 Sponsors

Sponsors of the conference in alphabetical order:

- Federation of Finnish Learned Societies
- SAS Analytics
- Scandinavian Journal of Statistics
- Springer
- Turku School of Economics Support Foundation
- Åbo Akademi

8 List of Authors

1	Mukherjee	Rahul	Some inequalities on the spherically truncated multi-normal distribution	oral
3	Lewitschnig	Horst	Area Scaling of failure probabilities for semiconductor devices	oral
4	Datta	Somnath	Robust Estimation of Marginal Regression Parameters in Clustered Data	oral
5	Asfaw	Zeytu	A Simulation Study of Statistical Inference in Non-homogeneous Poisson Processes with Emphasis on Frailty and Dynamic Behavior	oral
6	Holmström	Lasse	A Spatio-temporal Model for Fossil Pollen Based Reconstruction of the Paleoclimate	oral
7	Magalhães	Tiago	An improved Wald test in proper dispersion models	oral
8	Mehtätalo	Lauri	Estimation of Stand Density Using Aerial Images: A Forestry Application of the Boolean Spatial Model	oral
9	Li	Bing	Sufficient dimension reduction: an overview	oral
10	Hassan	Mohamed Yusuf	Modeling Correlated Durations and their Marks jointly using Mixture Transition Models	oral
11	Hallin	Marc	R-Estimation for Asymmetric Independent Component Analysis	oral
12	Sylvan	Dana	Estimation and visualization of quantile surfaces in flexible space-time settings	oral
13	Larsson	Rolf	Confidence distributions and nuisance parameters	oral
15	Zanini	Paolo	Multi-resolution analysis of EEG signals through Hierarchical Independent Component Analysis	oral
16	Moysiadis	Theodoros	Binary and Categorical Time Series Models with Feedback	oral
17	Laine	Marko	Modelling trends in climatic time series using the state space approach	oral

18	Mohdeb	Zaher	Testing the Equality of Non-parametric Regression Curves based on Fourier Coefficients	oral
19	Tvete	Ingunn Fride	Risk of excessive Benzodiazepine redeeming over time: a nationwide observational study	oral
20	Tvete	Ingunn Fride	A Mixed Treatment Comparison analysis of drugs for treating patients with Rheumatoid arthritis	oral
21	Nielsen	Søren Feodor	Kernel density estimation with imputed group membership information	oral
22	Galuszka	Adam	Graphs, Trees and Forests as Models of Psychosocial Factors	poster
23	Asar	Yasin	On some biasing estimators for the logit model	oral
24	Erişoğlu	Murat	Determining the number of clusters by multi dimensional scaling	oral
25	Erişoğlu	Ülkü	Percentile Estimators for Finite Mixture Distribution Models	oral
27	Jureckova	Jana	Averaged Extreme Regression Quantile	oral
28	Viitasaari	Lauri	Integral representations with respect to Hölder processes	oral
29	Matteson	David	Independent Component Analysis via Distance Covariance	oral
30	Möller	Sören	Methods for Studying Heritability of Cancer Diagnosis Using Twins	oral
31	Särkkä	Simo	Rao-Blackwellized Particle Filtering for Statistical Estimation of Large Predator Population	oral
32	Häbel	Henrike	Spatial statistical analysis of micro-structures of nano silica particle gels	oral
33	Belopolskaya	Yana	Stochastic processes associated with cross-diffusion parabolic systems	oral
34	Miettinen	Jari	Fourth Moments and Independent Component Analysis	oral
35	Jung	Brita	Exit times for autoregressive processes with different distributions	oral

36	Azmoodeh	Ehsan	Generalization of the Nualart-Peccati criterion	oral
37	Ahlgren	Niklas	Wild Bootstrap Tests for Autocorrelation in Vector Autoregressive Models	oral
38	Chen	Zhe	Pathwise stochastic integrals and Itô formula for multidimensional Gaussian processes	poster
39	Vanhatalo	Jarno	Assessing the current status of Baltic grey seal population and predicting its future	oral
40	Daas	Piet	Big Data as a Data Source for Official Statistics	oral
41	Junttila	Virpi	Regularized spatial Bayesian principal component regression for forest inventory	oral
42	Särkkä	Aila	Classification of mixtures of Strauss and Poisson point processes	oral
43	Critchley	Frank	Invariant Coordinate Selection revisited: Fisher Symmetry and Symmetric Component Analysis	oral
45	Arnesen	Petter	Fully Bayesian binary Markov random field models: Prior specification and posterior simulation	oral
46	Liu	Jia	Data augmentation in Rician noise model and Bayesian Diffusion Tensor Imaging	oral
48	Li	Zitong	Bayesian multiple regression methods for analyzing longitudinal genetic data	oral
49	Matomäki	Pekka	On an optimal variance stopping problem	oral
50	Tómasson	Helgi	A computational Bayesian approach to continuous-time-auto-regressive-moving-average (CARMA) models	oral
51	Jach	Agnieszka	Subsampling inference for the autocorrelations of GARCH processes	oral
52	Pasanen	Leena	Scale space multiresolution analysis of time series	poster
55	Huseby	Ragnar	Estimating dynamic roadway travel times	oral

56	Britton	Tom	On expected durations for oral branching and other birth-death type processes	
57	He	Changli	Smooth-Transition Cointegration	
58	Lehtomaa	Jaakko	On asymptotic scales of independently stopped random sums	oral
59	Fried	Roland	Robust and Nonparametric Shift Detection in Weakly Dependent Time Series	
60	Fellman	Johan	Mathematical Modelling of Lorenz curves	poster
62	Bondesson	Lennart	Hyperbolically Monotone Densities	oral
63	Yli-Heikkilä	Maria	Predicting profitability of dairy farms with a learning ensemble model	poster
64	Sandberg	Rickard	Testing for a Unit Root in Non-causal Autoregressive Models	oral
65	Johansen	Søren	The asymptotic analysis of some robust methods, including the Huber-skip, the Forward Search and the Impulse Indicator Saturation algorithm	oral
66	Zwanzig	Silvelyn	Variable selection with generalized SimSel methods	oral
67	Lehtonen	Risto	Small area estimation of poverty rate by model calibration and "hybrid" calibration	oral
68	Olsson	Fredrik	Estimation of the variance effective population size in age-structured populations	oral
69	Sund	Reijo	Solutions for using sensitive microdata in international register-based studies	oral
70	Hoveid	Øyvind	Using informative priors for approximate inference in non-linear Gaussian state space models	oral
71	Jobjörnsson	Sebastian	A Bayesian model for the selection of sample size in clinical trials	oral
72	Ärje	Johanna	Some mathematical results on percent model affinity (PMA) index	poster

73	Ala-Luhtala	Juha	Comparison of variational Bayes and classical SDE approximations for Bayesian smoothing in continuous-time stochastic systems with discrete-time measurements	poster
74	Kärkkäinen	Salme	Calibration of predictions for a new individual with an application to energy expenditure and smart shorts data	oral
75	Helske	Satu	Clustering multidimensional life sequences with hidden Markov models	poster
76	Karvanen	Juha	Nonparametric estimation of nonlinear causal effects from incomplete observational data	oral
77	Numminen	Elina	When relationships get complex: a general unsupervised approach for the inference on ecological interactions between species	poster
78	Pavlenko	Tatjana	Optimal classification of high-dimensional data with sparsity patterns	oral
79	Sánchez	José	Joint estimation of transcription networks and expression in cancer	oral
80	Ylitalo	Anna-Kaisa	Towards a less aggregate way of analyzing spatio-temporal eye movement data	poster
81	Pereira	Mariana	Next generation gene finding: using conditional random fields to search for antibiotic resistance genes	poster
82	Malmros	Jens	Respondent driven sampling and random walks on directed networks	poster
83	Liberts	Mārtinš	Classification of Network Traffic with Attacks	poster
84	Divino	Fabio	Lexis Random Fields Modeling in Mortality Surface Analysis	oral
85	Romadanova	Mariia	Probabilistic schemes of the Cauchy problem numerical solution for quasilinear parabolic equations	poster
86	Vihola	Matti	On the efficiency of pseudo-marginal Markov chain Monte Carlo	oral

87	Särndal	Carl-Erik	New challenges for the interaction between survey sampling theory and official statistics	oral
88	Christensen	Sören	Optimal stopping of strong Markov processes on the real line	
89	Thulin	Måns	High-dimensional hypothesis testing using random subspaces	oral
90	Anckar	Andreas	The fine structure of the stationary distribution for a simple Markov chain	oral
91	Sabolova	Radka	Tests for regression quantiles	poster
92	Sørensen	Øystein	Bayesian Inference for the Mallows Rank Model	oral
93	Pacholczyk	Marcin	Statistical potential based method for modeling and testing of Nf- κ B binding sites	poster
94	Rios	Felix	On generating directed acyclic graphs	oral
95	Rosenqvist	Gunnar	Indirect estimation of a simultaneous limited dependent variable model for patient costs and outcome	oral
96	Petersson	Mikael	Asymptotic Expansions for Perturbed Discrete Time Regenerative Processes	oral
97	Jonsson	Viktor	A Hierarchical Bayesian Model for Ranking of Genes in Metagenomics Based on Differential Abundance	poster
98	Jonsson	Viktor	Evaluation of Statistical Methods for Comparative Metagenomics	poster
101	Fujarewicz	Krzysztof	Sensitivity of Feature Ranked Lists for Biological Data	poster
102	Vitelli	Valeria	Bayesian Integration of Genomic Data	oral
103	Student	Sebastian	Multiclass classification system for large-scale cancer genomics data	poster
104	Westerlund	Per	Grade Levels for Multiple-Choice Tests	poster
105	Larocque	Denis	Multivariate Variance Components Tests for Multilevel Data	oral
106	Saikkonen	Pentti	A Gaussian mixture autoregressive model	oral

108	Laaksonen	Seppo	Bayesian and non-Bayesian multiple imputation with examples for a continuous variable	oral
109	Kujala	Maiju	Differential network analysis with multiply imputed lipidomic data	poster
110	Matilainen	Markus	Blind source separation for some multivariate heteroscedastic time series models	poster
111	Gelman	Andrew	Can we use Bayesian methods to resolve the current crisis of unreplicable research?	oral
112	Croux	Christophe	Robust and Sparse Canonical Correlation Analysis	oral
113	Nath, Mondal	Anannya, Purba	Kaplan Meier Estimator in multivariate setup and its robustness	poster
114	Winther	Ole	Non-parametric survival analysis in breast cancer using clinical and genomic markers	oral
115	Robinson	Sean	Computer Vision for 3D Stack Cellular Microscopy Images with Markov Random Fields	poster
116	Vehtari	Aki	Some probabilistic models for brain signal analysis	oral
117	Hult	Henrik	Rare-event simulation and Hamilton-Jacobi equations	oral
118	Bank	Peter	Stochastic convex envelopes and convex duality in singular control	oral
119	Aston	John	Some aspects of statistical neuroimaging	oral
	Konstantopoulos	Takis	Asymptotics in ordered random graphs	oral
	Pesonen	Henri	Dynamic causal modelling	oral

9 Notes

