Monday 20 july

Lundi 20 juillet

9:00 – 10:30 **Opening Lecture : Emmanuel Candes AUDITORIUM**
Compressive sensing: a statistical perspective.
Chairman : Jean Marc Azaïs

10:30 – 11:00 Coffee Break

11:00 – 12:30 **Special Invited Lecture I : Thomas Nichols CONCORDE**
Accounting for inter-subject variability in fMRI activation location: A Bayesian hierarchical spatial model. Chairman : Fetsje Bijma

Contributed Paper Session 1: Finance Room 206
Chairman: Olivier Linton
COGARCH: Relations to GARCH and Applications. G. Muller
Wavelet-based Estimation of Long-memory Stochastic Volatility. M. Hauser

Contributed Paper Session 2: Bootstrap Room 207
Chairman: Luc Pronzato
Bootstrap inference in 3D shape analysis via a multidimensional scaling approach. A.Wood
Total Least Squares and Bootstrapping. M. Pesta

Contributed Paper Session 3: Stationarity Room 210
Chairman: Clementine Prieur
Criteria for hypothesis testing for discrete-valued stationary processes. D. Ryabko
Learning a bivariate distribution with heavy tails. J. Carreau

Special Invited Lecture II : Iain Johnstone
Some statistical applications of random matrices.
Chaiman : Gyula Pap

Contributed Paper Session 4 : Finance, games Room 206
Chairman: Olivier Linton
A case study on using generalized additive models to fit credit rating scores. M. Muller
The accuracy of merging approximation in generalized St.Petersburg games. G. Pap

Contributed Paper Session 5 : Spatial statistics I Room 207
Chairman: Luc Pronzato
Towards an Equivalence Theorem for Random Fields? W.G. Müller
Spectral Methods for Multi-Manifold Clustering. E.A. Castro

Contributed Paper Session 6 : Heavy tails Room 210
Chairman: Clementine Prieur
Asymptotic analysis of random walks: Heavy-tailed distributions. K. Borovkov
Long-memory versus non-stationarity: a multi-scale test procedure.. O. Kouamo

12:30– 14:30 Lunch Break

14:30 – 16:00 **Invited Paper Session I : Håvard Rue TURING**
Gaussian Markov random fields.

Multiscale variational approaches to Gauss-Markov random fields. J. K. Johnson

Eliminating the practical boundary between Markov and other Gaussian fields. F. Lindgren

Latent Gaussian Markov random field models: a case study. A. Riebler

Invited Paper Session II : David Balding BAILLAUD
Statistics in forensic science.

Bayesian networks for analysis of DNA mixtures. S. Lauritzen

Making decisions in forensic science. S. Bozza

Probability based fingerprint evidence. R. Puchs-Solis

Invited Paper Session III : Stéphane Boucheron SHANNON
Information theory and statistics.

Coding on countably infinite alphabets. A. Garivier

Iterative coding and the exchange of limits : from density evolution to practical decoding algorithms. R. Urbanke

On the quantum channel capacity. J.-P. Tillich

Contributed Paper Session 7 : Design of experiments, linear models Room 206
Chairman: Jean-Marc Azais
Φ-optimality of Minimally Supported Uniform Design for a Linear Log Contrast Modelin Mixture Experiments. M.N.L Huang
An Exact Permutation Method for Testing All Effects For Any Design of ANOVA. S.Kerard
Row-wise Complementary Designs. S.W. Cheng
Stationary model in rotation schemes. J. Kowalski

Contributed Paper Session 8 : Tests I Room 207
Chairman: Stephan Sperlich
On Multivariate Runs Tests for Randomness. D. Paindaveine
LR Test for Stationarity of Markov Intensities. R. Weissbach
Goodness-of-fit tests for the distribution of random effects in a mixed model. G. Claeskens
Data Driven k-Sample Tests. G. Wylupek

16:00 - 16:30 Coffee Break

16:30 - 18:00 **Invited Paper Session IV : W. González Manteiga SHANNON**
New developments in goodness-of-fit testing.

Inference problems with resampling. S. Sperlich

Weak convergence of martingale function-parametric marked empirical processes with applications to autoregressive models. J.C. Escanciano

A robust approach to test in semiparametric models. G. Boente

Invited Paper Session V : O. Papaspiliopoulos BAILLAUD
Auxiliary variable methods in modelling and Monte Carlo methods.

Inference for diffusions. P. Fearnhead

MCMC auxiliary variable methods for doubly-intractable distributions. J. Moller

Auxiliary variables in Bayesian nonparametric modeling. I. Pruenster

Invited Paper Session VI : Richard Gill TURING
Quantum statistical theory.

Local asymptotic normality for quantum Markov chains. M. Guta

Tests in quantum statistics. C. Butucea

Asymptotic error rates in quantum hypothesis testing. M.Nussbaum

Contributed Paper Session 9 : Fonctional statistics   Room 206
Chairman: Ingrid Van Keilegom
Piecewise linear regression estimation in continuous-time. F. Lejeune
Global and local minimax-optimal estimation in functional linear model. J. Johannes
Robust depth-based curve registration. A. Arribas.G.
Second--Order Comparison of Random Curves. V. Panaretos

Contributed Paper Session 10 : Reliability, quality control Room 207
Chairman: Bertrand Iooss
Negative Binomial charts for monitoring high-quality procecesses. W. Albers
Alarm classification for patient monitoring in intensive care. W. Sieben
On the signature of consecutive systems. M. Koutras

18:30 - 19:30 Presentation of the virtual piano "Pianoteq" by Philippe Guillaume*

19:30 – 21:00 **Welcome Party**

*
Can the complexity and the richness of the piano sound be reproduced by the mean of a software using physical modelling? Far beyond the usual digital pianos and their pre-recorded samples, the virtual piano "Pianoteq" delivers for the first time piano sounds that are constructed in real time, introducing the fourth piano generation. After a discussion about the piano and its modelling, some audio examples will illustrate the obtained sounds and will lead us introducing some applications to virtual reproduction and restoration of historical instruments.

Tuesday 21 july

Mardi 21 juillet

9:00 – 10:30 **Forum Lecture I : Aad van der Vaart AUDITORIUM**
Frequentist properties of Bayesian procedures for infinite-dimensional parameters.
Chairman : Trevor Sweeting

10:30 – 11:00 Coffee Break

11:00 – 12:30 **Special Invited Lecture III : Andrew Majda CONCORDE**
Hybrid stochastic-statistical strategies for climate science.
Chairman : Richard Smith

Contributed Paper Session 11 : Tests I Room 206
Chairman: Laurent Cavalier
A simple test for comparing regression curves versus one-sided alternatives. J.C. Pardo.F
Sequential implementation of Monte Carlo tests with uniformly bounded resampling risk. A. Gandy

Contributed Paper Session 12 : Genetics I Room 207
Chairman: Catherine Mattias
Parametric Bayesian Inference For Y-Linked Bisexual Branching Processes Through MCMC Methods. R. Martinez
On the Inadmissibility of Wattersons Estimator. A. Futschik

Contributed Paper Session 13 : Statistics of processes I Room 210
Chairman: Stéphane Boucheron
Size-biased branching population measures. P. Olofsson

Special Invited Lecture IV: Gabor Lugosi CONCORDE
Performance bounds and algorithms in randomized sequential prediction.
Chairman : Gilles Blanchard

Contributed Paper Session 14 : Genetics I Room 207
Chairman: Catherine Mattias
An efficient large scale prediction and feature selection approach for microarray and proteomics data. K. Strimmer

Contributed Paper Session 15 : Statistics of processes I Room 210
Chairman: Stéphane Boucheron
Some developments of the Feigin-Tweedie Markov chain. S. Favaro

Contributed Paper Session 16 : Inverse problems Room 206
Chairman: Laurent Cavalier
Consistent density deconvolution under partially known error distribution. M. Schwarz
Asymptotic confidence bands in inverse regression problems. M. Birke

12:30– 14:30 Lunch Break

14:30 – 16:00 **Invited Paper Session VII: Richard Smith SHANNON**
Climate models.

Simple models for glacial cycles. J. Rougier

Statistical merging of multi-model ensembles. P.Naveau

Estimating the probability of climate change. R.Smith

Invited Paper Session VIII : Jared Tanner BAILLAUD
Compressed sensing.

Regularization with structured norms: Benefits and dangers in high-dimensions.
M. Wainwright

Higher criticism thre sholding: optimal feature selection when useful features are weak andrare. J. Jin

Invited Paper Session IX : Korbinian Strimmer TURING
Statistics of biological networks.

Network inference in cancer signalling. S.Mukherjee

Likelihood-free inference for biological networks. C.Wiuf

Inference of biological networks with pattern recognition. K. Bleakley

Contributed Paper Session 17 : Parametric statistics Room 206
Chairman: Sébastien Van Bellegem
Identifiability of latent class models with many observed variables. C. Matias
Optimal Alarm Systems for FIAPARCH Processes. M.C. Costa
A generalization of the empirical probability plot for assensing logistic regression models. M.C. Pardo
Integer-Valued FIAPARCH Processes. M. Scotto

Contributed Paper Session 18 : Proba I Room 207
Chairman: Pierre Tarres
Two-sided bounds for the asymptotically exact constants in the central limit theorem. I.Shevtsova
Random walks in weakly dependent random sceneries. C. Prieur
Between the laws of the iterated and single logaritms. A. Gut
The mixing advantage is less than 2. K. Hamza

16:00 - 16:30 Coffee Break

16:30 - 18:00 **Invited Paper Session X : J. Johannes SHANNON**
Ill-posed inverse problems.

Risk hull method for inverse problems. L. Cavalier

Parameter tuning in statistical inverse problem. V. Spokoiny

Adaptive inference in some ill-posed inverse problems in econometrics. S. Van Bellegem

Invited Paper Session XI : Y. Aït-Sahalia BAILLAUD
Statistics of financial mathematics.

Realized volatility when observations times can be endogenous. P. Mykland

New developments in financial econometrics. O.Linton

Estimating affine multifactor term structure models using closed-form likelihood expansions. R. Kimmel

Invited Paper Session XII : E. Baake TURING
Stochastics of population genetics and evolutionary biology.

Inference for Lambda-coalescents. M. Birkner

A study of evolutionary branching in a logistically regulated population. N. Champagnat

Contributed Paper Session 19 : Bayesian statistics Room 206
Chairman: Ismael Castillo
Bayesian Inference for the Generalized Exponential Distribution Based on Progressively Censored Data. M. Madi
A Multiresolution Approach to Time Warping achieved by Bayesian Prior-Posterior Transferring. L. Slaets
Asymptotics for posterior hazards. De Blasi

Contributed Paper Session 20 : Empirical process Room 207
Chairman: Philippe Berthet
Tail behavior of robust estimators. J Jureckova
Occupation time formula and the convergence in law of some empirical estimators. D. Dehay

18:30 **Reception at the Capitole**

Wednesday 22 july

Mercredi 22 juillet

9:00 – 10:30 **Invited Paper Session XIII : Valentin Patilea SHANNON**
Semiparametrics in survival analysis.

Non asymptotic risk bounds for functional estimation in survival analysis. F. Comte

Estimation in semiparametric models withmissing data. I. van Keilegom

Single index regression models under random censoring depending on the covariates. O.Lopez

Invited Paper Session XIV : Silke Rolles BAILLAUD
Random walks with interactions.

Models of the true self-avoiding random walk on Z^d. B.Vetô

Dynamics of self-interacting random walks. P. Tarres

Invited Paper Session XV : Anestis Antoniadis TURING
Design of computer experiments and sensitivity analysis.

Some issues in adpative computer experiments. L.Pronzato

A bootstrap approach to the use of metamodels for uncertainty and sensitivity analysis. C. B. Storlie

Use of sparse polynomial chaos expansions in global sensitivity analysis. B. Sudret

<u>Contributed Paper Session 21 : Statistics with wavelets</u> Room 206
Chairman: Sébastien Gadat
Adaptive lifting based on hypothesis testing for multiscale kernel smoothing of nonequidistant data with jumps. M. Jansen
Tree-structured Wavelet Estimation in a Functional Mixed Effects Model for Spectra of Replicated Time Series. R.V. Sachs.
Haar-like Bases and Harmonic Analysis on Matrices of Data. M. Gavish
A nonparametric estimation of the spectral density of a continuous-time Gaussian process observed at random times. J.M. Bardet .

<u>Contributed Paper Session 22 : Medical statistics</u> Room 207
Chairman: Béatrice Laurent
Predicting decline of renal function in people with diabetes using eGFR and ACR. I. Sousa

10:30 – 11:00 Coffee Break

11:00 – 12:30 Contributed Paper Session 23 : Survival data I Room 206
Chairman: Valentin Patilea
A generalized Koziol-Green model with covariates. A. Gaddah

Contributed Paper Session 24 : Proba II Room 207
Chairman: Thomas Duquesne
Symmetric and Skew. W.J. Huang
Exact distributions of product and ratio. A. Bekker

Contributed Paper Session 25 : Models, variables selection Room 210
Chairman: Aurélien Garivier
Selecting and estimating dependence structures using pair copulas. C. Czado
Bayesian model selection for multivariate copulas using pair-copula constructions. A. Min

Contributed Paper Session 26 : Time series I Room 212
Chairman: Philippe Naveau
Compression-based methods for nonparametric prediction and estimation of some characteristics of time series. B. Ryabko

Contributed Paper Session 27 : Spatial statistics II Room 214
Chairman: Harvard Rue
Semiparametric Estimation and Selection for Nonstationary Spatial Covariance Functions. N.J. Hsu
Asymptotic normality of the Quasi Maximum Likelihood Estimator for multidimensional causal processes. O. Wintenberger

Contributed Paper Session 28 : Survival data Room 206
Chairman: Valentin Patilea
Cox's regression model for left-censored data with an extra cure fraction R. Braekers .
Presmoothed Kaplan-Meier integrals and the missing censoring indicator model. J. Mendoça

Contributed Paper Session 29 : Proba II Room 207
Chairman: Thomas Duquesne
Randomized algorithms for statistical image analysis based on percolation theory.
M. Langovoy
Putting Schrödinger's cat to rest. R. Gill

Contributed Paper Session 30 : Models, variables selection Room 210
Chairman: Aurélien Garivier
Grouping Pursuit . H-C. Huang
RoSIS - A Method for Robust Variable Selection. C. Guddat

Contributed Paper Session 31 : Time series I Room 212
Chairman: Philippe Naveau
Time-reversion of VARMA processes by Polynomial Methods. F. Aparicio

Contributed Paper Session 32 : Spatial Statistics II Room 214
Chairman: Harvard Rue
Least squares estimation of nonlinear spatial trends. R. Crujeiras
On the covariance structure of an unstable unilateral spatial autoregressive model. S. Baran

12:30– 14:00 Lunch Break

14:00 **Excursions**

Thursday 23 july

Jeudi 23 juillet

9:00 – 10:30 **Forum Lecture I I: Aad van der Vaart AUDITORIUM**
Frequentist properties of Bayesian procedures for infinite-dimensional parameters.
Chairman : Judith Rousseau

10:30 – 11:00 Coffee Break

11:00 – 12:30 **Special Invited Lecture V: Geert Molenberghs CONCORDE**
Every missing not at random model for incomplete data has got a missing at random counterpart withequal fit.
Chaiman : Ingrid van Keilegom

Contributed Paper Session 33 : MCMC Room 206
Chairman: Fabrice Gamboa
Control Variates for Reversible MCMC Samplers. P. Dellaportas

Contributed Paper Session 34 : Non parametric statistics I Room 207
Chairman: Olivier Lopez
Simultaneous Confidence Bands for Penalized Spline Estimators. T. Krivobokova
Minimum risk invariant estimators of a continuous cumulative distribution function R. Magiera .

Contributed Paper Session 35 : Bayesian statistics II Room 210
Chairman : Judith Rousseau
Convergence rates for posterior distributions of Dirichlet mixtures of normal densities. C. Scricciolo
Explicit solutions of the Bayes sequential estimation problem for an exponential distribution under a general loss function. A. Jokiel

Special Invited Lecture VI : Péter Major CONCORDE
Estimation of multiple random integrals and U-statistics
Chaiman : Jean-Marc Azaïs

Contributed Paper Session 36 : MCMC Room 206
Chairman: Fabrice Gamboa
Diffusion Limits for MCMC Paths. A. Beskos
Efficient Gibbs Sampling for Inferring the Strategy of a Markov Decision Process. S.S.Singh

Contributed Paper Session 37 : Non parametric statistics I Room 207
Chairman: Olivier Lopez
Minimax estimation of the mixing density of a mixture of exponential distributions. T. Rebafka
Some deconvolution problems in density estimation. U. Stadtmuller

Contributed Paper Session 38 : Time series II Room 210
Chairman: Anne-Laure Fougères
Integer-valued Self-exciting Threshold Autoregressive Processes. M. Monteiro
On clustering of non-stationary meteorological time series. I. Horenko

12:30– 14:30 Lunch Break

14:30 – 16:00 **Invited Paper Session XVI : Gilles Blanchard SHANNON**
Statistical learning.

Optimal model selection. S. Arlot

Aspects of nonparametric regression between manifolds. M. Hein

Optimal ranking methods. N. Vayatis

Invited Paper Session XVII : ZengHu Li TURING
Modelling with Lévy and branching processes.

The last minutes before extinction. P. Jagers

Packing measure of Levy trees and superprocesses. T. Duquesne

Branching random walks and multiplicative cascades in random environment. Q. Liu

Invited Paper Session XVIII : F. Gamboa BAILLAUD
Statistical and stochastic methods for computer codes in industry.

Gaussian processes and active learning in the oil industry: global sensitivity analysis and model calibration by data assimilation. D. Busby

Statistical issues in nuclear safety analysis through computer models. B. Iooss

Contributed Paper Session 39 : Extremes Room 206
Chairman: Thomas Mikosch
Multicollinearity and Outlier Detection. T. Jurczyk
Extreme identification loss as a performance criterion in nonparametric regression. H. Weinert
On prediction of future record values. M. Ould Aboubecrine
The effect of discrete sampling for the distribution of the extremes. Application to the estimation of diffusion coefficient for the models of temperature in Europe. D.Dacunha.C.

Contributed Paper Session 40 : Semi-parametric statistics Room 207
Chairman: Ismael Castillo
Semiparametric inference for regression models with incomplete data. U. Müller
M-estimation in semi-parametric models when the criterion function is not smooth. L. Delsol
Merging Information for Semiparametric Adaptive Projection Density Estimation. S. Leoni A.

16:00 - 16:30 Coffee Break

16:30 - 18:00 **Special Invited Lecture VII: Nina Gantert CONCORDE**
Frogs and other branching random walks.
Chairman : Silke Rolles

Contributed Paper Session 41 : Non parametric statistics II Room 206
Chairman: Clément Marteau
Laws of the Iterated Logarithm for Nonparametric Sequential Density Estimators. K. Lagha
Testing the significance of the first smooth principal component. A. Ribes

Contributed Paper Session 42 : Models, variables selection I Room 207
Chairman: Béatrice Laurent
Optimal model selection procedures in density estimation. M. Lerasle
Model selection via cross-validation. A. Celisse

Contributed Paper Session 43 : Diffusion parameters estimation Room 210
Chairman: Laure Coutin
Estimating discontinuous periodic signals in a non-time homogeneous diffusion process. R. Hopfner
Saddlepoint approximations in inference for stochastic differential equations. S.P. Preston

Contributed Paper Session 44 : Survival data Room 212
Chairman: Kevin Bleakley
Presmoothed Kaplan-Meier for censored gap times. A. Amorim
Spline modelling of cumulative and non-linear effects of time-varying risk factors on the hazard.
M. Abrahamowicz

Special Invited Lecture VIII : Tillmann Gneiting CONCORDE
Probabilistic weather forecasting.
Chaiman : Petros Dellaportas

Contributed Paper Session 45 : Sparse models Room 206
Chairman: Clément Marteau
Taking Advantage of Sparsity in Multi-Task Learning. K. Lounici
Sparse classification boundaries. C. Pouet

Contributed Paper Session 46 : Models, variables selection II Room 207
Chairman: Béatrice Laurent
A variable selection proposal for multiple linear regression analysis. D. Uys
Confidence Sets Based on Penalized Maximum Likelihood Estimators. U. Schneider
A generalization of the elastic net for structured predictors. M. Slawski

Contributed Paper Session 47 : Statistics of processes II Room 210
Chairman: Laure Coutin
Animal growth in random environments. C.A. Braumann
Non-Parametric Estimation for Multivariate Compound Poisson Processes and Goodness-of-Fit Testing. M. Schicks

Contributed Paper Session 48 : Network, Graphical models Room 212
Chairman: Kevin Bleakley
Graphical Gaussian Models with Symmetries-Identifying Permutation Symmetry. H. Neufeld
Overlapping Stochastic Blockmodels. P. Latouche

20:00 **Conference Dinner**

Friday 24 july

Vendredi 24 juillet

9:00 – 10:30 **Invited Paper Session XIX : Fetsje Bijma SHANNON**
Statistical methods in neuroscience.

Inferring brain interactions and causality in the presence of correlated and colored background noise. G. Nolte

Point process filters and the analysis of neural spike train data. U. Eden

Bayesian spatio-temporal models of fMRI data. L. Harrison

Invited Paper Session XX : Judith Rousseau TURING
Nonparametric and semiparametric Bayesian procedures.

Bayesian nonparametric regression with dynamic constraints. S. Petrone

A semiparametric Bernstein-von Mises theorem. I. Castillo

Bernstein Von Mises on functionals of the density. J. Rousseau

Invited Paper Session XXI : Maria Deijfen BAILLAUD
Stochastics of complex networks.

Random networks for communication. M. Franceschetti

Stochastic models for complex self-organizing networks. J.Janssen

Critical behavior in inhomogeneous random graphs. R.van der Hofstad

10:30 – 11:00 Coffee Break

11:00 – 12:30 **Invited Paper Session XXII : Thomas Mikosch SHANNON**
Extreme values .

Tails of weighted sums of random variables and ruin probability. A.L. Fougeres

Ruin probabilities under general investments and heavy-tailed claims. H. Hult

An M-estimator for tail dependence in arbitrary dimensions. J. Segers

Invited Paper Session XXIII: Mark Girolami TUNING
Statistics of biological systems and differential equations.

Gaussian process modelling of latent chemical species in systems biology differential equations models. M. Rattray

Bayesian reverse engineering of dynamical systems. M.Stumpf

Bayesian inference for systems of nonlinear differential equations. M. Girolami

Invited Paper Session XXIV : Sofia Olhede BAILLAUD
Multiscale and geometric methods.

Introduction: Structure, scale and statistics. S. Olhede

Multiscale methods in statistics S. Olhede

Sequential Inference for continuous-time processes with jumps. S. Godsill

12:30 – 14:30 Lunch Break

14:30 – 16:00 **Closing Lecture : Jeff Steif AUDITORIUM**
An overview and recent developments in percolation theory.
Chairman : Petros Dellaportas

16:30 **End of Conference**