

Preface

The 11th Abel Symposium on “Statistical Analysis for High-Dimensional Data” was held at Nyvågar Rorbuhotell, near the village of Kabelvåg, in the Lofoten archipelago, Norway, from Monday, May 5, to Friday, May 9, 2014. This Abel Symposium Proceedings contains a selection of papers within this field.

There were 53 participants, and participation was by invitation only. The scientific committee for the symposium consisted of the editors of this Abel Symposium volume: Peter Bühlmann, Arnoldo Frigessi, Ingrid K. Glad, Mette Langaas, Sylvia Richardson, and Marina Vannucci.

The symposium had 23 invited talks:

Yoav Benjamini	Addressing statistical woes affecting replicability
Peter J. Bickel	Asymptotic analysis of unlabeled networks and an application
Leonardo Bottolo	Bayesian hierarchical mixture models
Tony Cai	Sparse PCA: optimal rates, adaptive estimation, and computational challenges
Mathias Drton	Ising model selection with Bayesian information criteria
Edward I. George	Spike-and-slab variable selection
Jelle J. Goeman	A global \times global test for association between two high-dimensional data sets
Chris Hans	From a conditional Lindley’s paradox to poly-hyper- g priors in Bayesian regression
Trevor Hastie	Sparse models and coordinate descent
Nicolai Meinshausen	Maximin effects for heterogeneous large-scale data
Xiao-Li Meng	The potential and perils of preprocessing: building new foundations
Sach Mukherjee	High-dimensional approaches for investigating disease heterogeneity

Peter Müller	A Bayesian feature allocation model for tumor heterogeneity
Susan A. Murphy	Micro-randomized trials and off-policy reinforcement learning
Judith Rousseau	Asymptotic properties of empirical Bayes procedures in parametric and nonparametric models
Richard Samworth	Independent component analysis via nonparametric maximum likelihood estimation
Terence P. Speed	Removing unwanted variation for prediction
Sara van de Geer	Confidence sets for the graphical lasso
Martin J. Wainwright	Randomized sketches of high-dimensional convex programs: practical schemes and sharp rates
Mike West	Dynamic sparsity modeling
Bin Yu	Relating developmental transcription factors (TFs) based on <i>Drosophila</i> embryonic gene expression images

The participants not giving invited talks had the possibility to give a short presentation of their work. Contributed talks were given by Magne T. Aldrin, Bettina Kulle Andreassen, Elja Arjas, Lamiae Azizi, Linn Cecilie Bergersen, Peter Bühlmann, Jan Christoph Ernest, Arnaldo Frigessi, Ingrid K. Glad, Clara-Cecilie Günther, Kari K. Halle, Kristoffer H. Hellton, Eric B. Laber, Mette Langaas, Tonje G. Lien, Ole Christian Lingjærde, Keli Liu, Edgar A. Muro Jimenez, Christian M. Page, Andrea I. Riebler, Sylvia Richardson, Daniel P. Simpson, Nicolas Städler, Øystein Sørensen, Marina Vannucci, Valeria Vitelli, Verena Zuber, and Erik W. van Zwet.

The full list of participants follows:

Aldrin, Magne T.	Norwegian Computing Center
Andreassen, Bettina Kulle	University of Oslo
Arjas, Elja	University of Oslo
Azizi, Lamiae	University of Cambridge
Benjamini, Yoav	Tel Aviv University
Bergersen, Linn Cecilie	University of Oslo
Bickel, Peter J.	University of California at Berkeley
Bottolo, Leonardo	Imperial College London
Bühlmann, Peter	ETH Zürich
Cai, Tony	University of Pennsylvania
Drton, Mathias	University of Washington
Ernest, Jan Christoph	ETH Zürich
Frigessi, Arnaldo	University of Oslo
George, Edward I.	University of Pennsylvania
Glad, Ingrid K.	University of Oslo

Goeman, Jelle J.	Leiden University
Günther, Clara-Cecilie	Norwegian Computing Center
Halle, Kari K.	Norwegian University of Science and Technology
Hans, Chris	Ohio State University
Hastie, Trevor	Stanford University
Hellton, Kristoffer H.	University of Oslo
Hjort, Nils Lid	University of Oslo
Laber, Eric B.	North Carolina State University
Langaas, Mette	Norwegian University of Science and Technology
Lien, Tonje G.	University of Oslo
Lingjærde, Ole Christian	University of Oslo
Liu, Keli	Harvard University
Low, Mark G.	University of Pennsylvania
Meinshausen, Nicolai	ETH Zürich
Meng, Xiao-Li	Harvard University
Mukherjee, Sach	Netherlands Cancer Institute
Müller, Peter	University of Texas, Austin
Muro Jimenez, Edgar A.	ETH Zürich
Murphy, Susan A.	University of Michigan
Page, Christian M.	University of Oslo
Richardson, Sylvia	University of Cambridge
Riebler, Andrea I.	Norwegian University of Science and Technology
Rousseau, Judith	Université Paris Dauphine
Rue, Håvard	Norwegian University of Science and Technology
Salomond, Jean-Bernard	Université Paris Dauphine
Samworth, Richard	University of Cambridge
Simpson, Daniel P.	Norwegian University of Science and Technology
Sørensen, Øystein	University of Oslo
Speed, Terence P.	Walter and Eliza Hall Institute of Medical Research
Städler, Nicolas	The Netherlands Cancer Institute
Thoresen, Magne	University of Oslo
van de Geer, Sara	ETH Zürich
van Zwet, Erik W.	Leiden University
Vannucci, Marina	Rice University
Vitelli, Valeria	University of Oslo
Wainwright, Martin J.	University of California, Berkeley
West, Mike	Duke University
Yu, Bin	University of California, Berkeley
Zuber, Verena	University of Oslo

We thank the Norwegian Mathematical Society for nominating our application and the Board for the Niels Henrik Abel Memorial Fund for deciding to support it.

We also thank the organizing committee, consisting of the participants Magne T. Aldrin, Bettina Kulle Andreassen, Arnaldo Frigessi, Ingrid K. Glad, Clara-Cecilie Günther, Kristoffer H. Hellton, Mette Langaas, Tonje G. Lien, Christian M. Page, Øystein Sørensen, and in addition Elisabeth H. Seland. Further; we would like to acknowledge the excellent service we received from the staff at the Nyvågar Rorbuhotell during our stay.

Special thanks goes to the contributors to this volume and to the participants and the speakers for their part toward the success of the symposium. Finally, we would like to thank Springer and Ruth Allewelt, for great patience and service during the preparation of this volume.

Oslo, Norway
Zürich, Switzerland
Oslo, Norway,
Trondheim, Norway
Cambridge, UK
Houston, TX, USA
October 2015

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<http://www.springer.com/978-3-319-27097-5>

Statistical Analysis for High-Dimensional Data

The Abel Symposium 2014

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2016, XII, 306 p. 65 illus., 46 illus. in color., Hardcover

ISBN: 978-3-319-27097-5