

JULIEN CHIQUET

CURRICULUM VITÆ

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CURRICULUM VITÆ

JULIEN CHIQUET

Born July 26, 1980

French citizen

Married, father of 2 children

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<http://julien.cremeriefamily.info>

RESEARCHER in Statistics, INRA

MIA Paris

UMR 518 AgroParistech/INRA

16, rue Claude Bernard

75231 Paris Cedex 05, France

BRIEF SUMMARY OF ACTIVITIES

Research themes	STATISTICAL LEARNING, COMPUTATIONAL BIOLOGY Sparse Methods and Regularization · Gaussian Graphical Models · Multivariate Analysis · High Dimensional Data · Applications in Genetics, Genomics and Ecology
production	20 journal papers, 5 book chapters, 9 maintained R packages, 2 preprint.
students	4 ongoing PhD (3 x 50%, 1 x 25%), 4 alumni
Teaching	STATISTICS, DATA MINING, NUMERICAL ANALYSIS ≈ 1500 hours for undergraduate and Master students in biology, mathematics and computer science departments
Schools	Université d'Évry, École Nationale Supérieure d'Informatique pour l'Industrie et l'Entreprise (ENSIIE), Université de Technologie de Compiègne (UTC), École Nationale de la Statistique et de l'Analyse de l'Information (ENSAI), AgroParisTech

PROFESSIONAL EXPERIENCE

since 2016	FIRST CLASS RESEARCHER INRA Department of Applied Mathematics and Informatics (MIA) MIA Paris, UMR 518 INRA/AgroParisTech
2012 – 2015	INVITED RESEARCHER POSITION INRA (3 years) MIA Paris, UMR 518 INRA/AgroParisTech
2008 – 2015	ASSISTANT PROFESSOR (26 ^e section) UMR 8071 Statistique & Génome, Université d'Évry
2006 – 2008	RESEARCH AND TEACHING ASSISTANT Université de Technologie de Compiègne, Université d'Évry
2003 – 2006	PHD STUDENT French Nuclear Agency (CEA) Saclay

EDUCATION

2015	HABILITATION IN MATHEMATICS
Title	<i>Contributions to sparse methods for complex data analysis</i>
Reviewers	A. d'Aspremont (DR CNRS, ENS), A. Dalalyan (PR, ENSAE), J.-P. Vert (DR Mines ParisTech/Institut Curie)
2003–2007	PHD IN APPLIED MATHEMATICS
Title	<i>Modeling and Estimating degradation processes with application in reliability</i>
Supervisor	French Nuclear Agency (CEA), Saclay Nikolaos Limnios (PR Université de Technologie de Compiègne)
2003	M.S. IN COMPUTATIONAL SCIENCE AND STATISTICAL LEARNING, Université de Technologie de Compiègne
2003	COMPUTER ENGINEERING SCHOOL, Université de Technologie de Compiègne

SCIENTIFIC ACTIVITIES

PARTICIPATION TO RESEARCH GRANTS

ON GOING PROJECTS

2019–2022	ECONET – ADVANCED STATISTICAL MODELLING OF ECOLOGICAL NETWORKS
<i>Leader</i>	Catherine Matias (Senior Researcher CNRS, LPMA)
<i>Partners</i>	MIAP, LPMA, LBBE, ISEM IEES-MNHN, EEP
<i>Support</i>	French National Research Agency (ANR)
<i>participation</i>	8 months
2018–2021	NEXT GENERATION BIOMONITORING OF CHANGE IN ECOSYSTEMS STRUCTURE AND FUNCTION
<i>Leader</i>	David Bohan (Senior Researcher Inra, Dijon)
<i>Partners</i>	MIAP, UMR AgroÉcologie, UMR EEP, UMR BIoGeCo, Imperial College, Cirad, UMR CEFE, UMR IGEP
<i>Support</i>	French National Research Agency (ANR)
<i>participation</i>	4.8 months
2018–2019	KINETICKS – Network and modelling analyses to describe the dynamics of Ixodes ricinus microbiome and its influence in pathogen evolution
<i>Leader</i>	Thomas Pollet (CR, BIPAR), Julien Chiquet (CR, MIAP), Béatrice Laroche (Senior Researcher, MaIAGE)
<i>Support</i>	Metaprogramm MEM (Meta-omics and microbial ecosystems, Inra)
<i>participation</i>	3.8 months
2017–2019	SEARS – STRATÉGIES D'ÉCHANTILLONNAGE ET ANALYSE DES RÉSEAUX D'APPROVISIONNEMENT EN SEMENCES
<i>Leader</i>	Mathieu Thomas, (CR Cirad, AGAP)
<i>Support</i>	MP GloFoods
<i>participation</i>	1 month
2016–2018	LEARNBIOCONTROL: LEARNING ECOLOGICAL NETWORKS FROM METABARCODING DATA: APPLICATION TO BIOLOGICAL CONTROL
<i>Leader</i>	Corinne Vacher (Senior Researcher Inra, Bordeaux)
<i>Partners</i>	UMR MIAP, UMR BIoGeCo, Imperial College
<i>Support</i>	MP MEM (Inra)
<i>participation</i>	1.5 month
2016–2018	BRASSICADIV-PATHO: Microbial diversity and microbial networks associated to Brassica napus and its pathogens
<i>Leader</i>	Christophe Mougél (Senior Researcher Inra, Rennes), Thierry Candresse (Senior Researcher Inra, Bordeaux)
<i>Partners</i>	UMR IGEPP, UMR BFP, UMR BioGeCo, UMR EPGV, UMR BioGer
<i>Support</i>	Metaprogramm MEM (Meta-omics and microbial ecosystems, Inra)
<i>participation</i>	1.5 month

PAST

2016–2018	LIONS – Large-scale Integrative approach to unravel the complex relationships between differentiatIOn and tumorigenesis
<i>Leader</i>	Mohamed ELATI, MCF, Université d'Évry Val-d'Essonne
<i>Partners</i>	IGMM/IBC, MAP5, iSSB Évry, Institut Curie, University of York
<i>Support</i>	Plan Cancer 2015 Inserm
2015–2018	HYDROGEN – Comparative Metagenomic for Measuring Biodiversity, Application to Ocean Life Studies
<i>Leader</i>	Dominique Lavenier, DR CNRS, INRIA Rennes
<i>Partners</i>	UMR MIAP, CEA-CNS-LABIS, Inria-Genscale
<i>Support</i>	French National Research Agency (ANR)

2012–2016	ABS4NGS – Algorithmic, Bioinformatic and Software solutions for the analysis of Next Generation Sequencing data
<i>Leader</i>	Institut Curie
<i>web</i>	https://sites.google.com/site/abs4ngs/
<i>Support</i>	Investissement d’avenir
2014–2016	AREA – Analyse de la Réponse Evolutive des Arbres forestiers tropicaux dans l’environnement, approche génomique et métabolomique
<i>Leader</i>	Grégory Genta-Gouve, Assoc. Prof., Paris 5
<i>Partners</i>	UMR MIAP; UMR EcoFoG; UMR 8638 (CNRS/P5)
<i>Support</i>	Défi CNRS “Enviromics”
2015–2016	BEFAST – Deriving Better learning procedures from FASTER algorithms to deal with a huge amount of Data
<i>Leader</i>	Alain Célisse, Assoc. Prof., University Lille 1
<i>Support</i>	PEPS CNRS Fascido
2013–2015	REG4SEL – Regularized methods for Genomic Selection
<i>Leader</i>	Tristan Mary-Huard, CR INRA/AgroParisTech
<i>Support</i>	SelGen/French National Institute Agronomic Research (INRA)
<i>Partners</i>	UMR MIAP, UMR Le Moulon, GABI
2013–2014	ENORM – Enumeration of Near-Optimal Regulation Misbehaviours
<i>Leader</i>	Étienne Birmelé, PR University Paris 5
<i>Support</i>	PEPS CNRS
2011–2015	PLOID-PLOID WHEAT – Unraveling bases of polyploidy and aneuploidy responses in flowering plants, using the wheat ploid model
<i>Leader</i>	Boulos Chaloub, Senior Researcher INRA
<i>Support</i>	French National Research Agency (ANR)
2009–2011	NEMO – Network Motif in Biological Network
<i>Leader</i>	Stéphane Robin, Senior Researcher INRA/AgroParisTech
<i>Support</i>	French National Research Agency (ANR)
2005–2008	GD2GS – From Genomic Data to Graph Structure
<i>Leader</i>	Florence d’Alché-Buc, Prof. Évry
<i>Support</i>	French National Research Agency (ANR)

RESEARCH ENHANCEMENT

CURRENT WORKGROUPS

since 2017	WORKGROUP STATE OF THE R (FUNDING \approx 4000€/YEAR)
<i>Purpose</i>	Group of researchers and engineers meeting to deepen their know-how, improve the dissemination of their statistical methods and exchange around the latest innovations of R and Rstudio
<i>Format</i>	An annual week of workshops + a half-day monthly meeting
<i>Involvement</i>	Group leader
<i>Web</i>	http://stateofther.github.io
since 2009	INRA METHODOLOGICAL WORKGROUP NETBIO (FUNDING \approx 5000€/YEAR)
<i>Purpose</i>	This group is meant to evaluate the performance of the reconstruction methods for networks in the framework of molecular biology
<i>Format</i>	A daylong annual meeting with 50 people
<i>Involvement</i>	Co-organizer since 2012, regular speaker
<i>Web</i>	carlit.toulouse.inra.fr/wikiz/index.php/Inférence_de_réseaux_-_réseau_MIA
since 2015	GDR “STAT ET SANTÉ”
<i>Purpose</i>	This group aims to structure and disseminate the activities of the French community of medical statistics.
<i>Involvement</i>	Co-leader of the research theme “Statistical learning for massive data analysis”
<i>web</i>	http://gdr.statsante.fr/

SCIENTIFIC EVENTS

Workshop	ORGANIZING COMMITTEE
<i>StatLearn'14</i>	Challenging problems in Statistical Learning – web page
<i>JFRB'14</i>	Journées Francophones sur les Réseaux Bayésiens – web page
<i>IWAP 2008</i>	International Workshop on Applied Probability 2008 – web page
<i>MBN 2007</i>	Mathematics for Biological Networks 2007
Lecturer	SUMMER SCHOOL
<i>Surf64'17</i>	AdvancedOMIC Profiling and Integration – web page
<i>SPS'16</i>	From gene expression to genomic network – web page
<i>Angers'16</i>	Bioinformatic Summer School in Angers – web page
<i>BigOptim'15</i>	Large-Scale Convex optimization – web page

OTHER PROFESSIONAL ACTIVITIES

Committee	BOARD OF RECRUITMENT
2018	Researcher INRA (4 postes)
2016	Assistant Professor, Paris Sud (64-65 ^e)
2015	Assistant Professor, Paris Sud (87 ^e)
2013	Assistant Professor, Paris V (26 ^e)
2012	Research Engineer INRA · Assistant Professor, Rouen (26 ^e)
2011	Assistant Professor, Picardie (87 ^e) · Paris Sud (67 ^e) · Évry (26 ^e)
2010	Assistant Professor, Évry (26 ^e)
Committee	PHD DEFENCE COMMITTEE
2018	May Taha (Reviewer)
2017	Thomas Dias-Alvès (Reviewer), Pierre-Alexandre Mattéi
2016	Samuel Balmand (Reviewer), Quentin Grimonprez (Reviewer), Rawya Zreik (Reviewer), Niels Ternès
Committee	PHD FOLLOW-UP
2018	Arnaud Cougoul (Inra Theix)
2017	May Taha (IGMM Montpellier)
2016	Maximilien Grandclaudon (Institut Curie), Arnaud Cougoul (Inra Theix), May Taha (IGMM Montpellier)
2014	Mélina Gallopin (Laboratoire de mathématiques d'Orsay)
Reviewer	PAPER REPORTS
<i>Journal</i>	Scandinavian Journal Statistics, The International Journal of Biostatistics, IEEE/ACM Transactions on Computational Biology and Bioinformatics Biometrics, Electronic Journal of Statistics, Plos Computational Biology, Computational Statistics and Data Analysis, Biometrika, Bioinformatics, IEEE/ACM Transactions on Computational Biology and Bioinformatics, ESAIM Prob. and Stat., SAGMB, EURASIP Journal on Bioinformatics and Systems Biology, BMC Medical Research Methodology, International Journal of Fatigue, Methodology and Computing in Applied Probability, QTQM, Revue d'Intelligence Artificielle, Revue des Nouvelles Technologies de l'Information
<i>Conference</i>	NIPS 2012–2017, ICML 2015,2018, JdS 2011, JOBIM 2008, ESREL 2007, IWAP 2008
Others	VARIOUS RESPONSABILITIES
2016	Elected member of the Scientific Council of the INRA Math-Info department

STUDENTS

PHD AND POST-DOC – CURRENT

since 2017	MARTINA SUNDQVIST
<i>PhD</i>	<i>Intégration des données protéomiques pour une nouvelle classification des cancers du sein triple-négatifs</i>
<i>Supervision</i>	50% with T. Dubois, Institut Curie

since 2017	AUDREY HULOT
<i>PhD</i>	<i>Analyse de données-omiques: clustering et inférence de réseaux</i>
<i>Supervision</i>	25% with F. Jaffrezic, Senior Researcher, Inra (50%); H.-J. Garchon, PUPH, Inserm (25%)
since 2016	TIMOTHÉE TABOUY
<i>PhD</i>	<i>Modeling and inferring Sampling design in probabilistic random network models</i>
<i>Supervision</i>	50% with P. Barbillon, Assoc. Prof., AgroParisTech
since 2016	MARIE PERROT-DOCKES
<i>PhD</i>	<i>Regularization tools for multivariate analysis: application to multi-omics</i>
<i>Supervision</i>	50% with Céline Lévy-Leduc, Prof., AgroParisTech

PHD AND POST-DOC – ALUMNI

2013-2016	TRUNG HA
<i>PhD</i>	<i>Statistical learning and multivariate analysis for robust regulatory network inference</i>
<i>Supervision</i>	25% with M.-L. Martin, DR INRA/URGV and G. Rigaiil, Assoc. Prof., Évry
2015	DAVID BAKER
<i>Post-doc</i>	<i>Regularization methods for Genomic Selection</i>
<i>Supervision</i>	50% with Tristan Mary-Huard, CR INRA/Moulon
2011-2014	SMAHANE CHALABI
<i>PhD</i>	<i>Caractérisation de la reprogrammation de l'expression des gènes induite par l'alloploïdie chez le blé</i>
<i>Supervision</i>	25% with Boulos Chaloub, Senior Researcher INRA/URGV, Évry
2012-2013	ÉDITH LE FLOCH
<i>Post-doc</i>	<i>Analysis of NGS data to characterize polyploidy</i>
<i>Supervision</i>	50% with Carène Rizzon, Assoc. Prof., Évry
2011-2013	JONATHAN PLASSAIS
<i>PhD</i>	<i>Développement méthodologique pour la méta-analyse appliquée à la caractérisation de signatures chez les patients atteints de maladie auto-immune</i>
<i>Supervision</i>	50% with Christophe Ambroise, Prof., Évry
<i>Support</i>	CIFRE, société TcLand www.tcland-expression.com
2009–2012	CAMILLE CHARBONNIER
<i>PhD</i>	<i>Inference of gene regulatory networks from non-iid transcriptomic data</i>
<i>Supervision</i>	50% with Christophe Ambroise, Prof., Évry

MASTERS – CURRENT

2017	RÉMI BERNHARD (2 months)
<i>Supervision</i>	École Nationale Supérieure d'Informatique pour l'Industrie et l'Entreprise (ENSIIE) with T. Flûtre, CR Inra Montpellier, L. Sansonnet, Assoc. Prof., AgroParisTech; T. Mary-Huard, CR Inra Moulon
<i>Master 1</i>	<i>Sélection de variable structurée pour le modèle linéaire général: application aux études GWAS multi-trait chez la vigne</i>
2017	MARTINA SUNDQVIST (6 months)
<i>Supervision</i>	ENS, Paris-Descartes, Institut Curie with T. Dubois, L. De Koning, Institut Curie; G. Rigaiil, CR Inra/BAP
<i>Master</i>	<i>Clustering for proteomic and transcriptomic analysis of basal breast cancer</i>

MASTERS – ALUMNI

2016	AUDREY HULOT (6 months)
<i>Supervision</i>	École Nationale de la Statistique et de l'Analyse de l'Information (ENSAI) with G. Rigaiil, CR and F. Jaffrezic, DR INRA
<i>Master</i>	<i>Clustering convexe à large échelle pour la métagénomique</i>

2016	TIMOTHÉE TABOUY (6 months) Master Math et Science du Vivant, Paris-Saclay
<i>Supervision</i>	with P. Barbillon, S. Ouadah, Assoc. Prof., AgroParisTech; S. Donnet, CR Inra
<i>Master</i>	<i>Modeling and inferring Sampling design in probabilistic random network models</i>
2016	MARGOT BRÉGÈRE (6 months) Master Math et Science du Vivant, Paris-Saclay
<i>Supervision</i>	33% with C. Lévy-Leduc, Prof. and L. Sansonnet, Assoc. Prof., AgroParisTech
<i>Master</i>	<i>Variable selection in Multivariate ANOVA for ecological data</i>
2015	VALENTIN DERVIEUX (6 months) Télécom Sud Paris
<i>Supervision</i>	50% with Guillem Rigaill, Assoc. Prof., Évry
<i>Master</i>	<i>Clustering et analyse multivariée de données métagénomique du porc</i>
2012-2013	PIERRE GUTIERREZ (6 months + 3 months CDD) École Nationale de la Statistique et de l'Administration (ENSAE)
<i>Supervision</i>	50% with Guillem Rigaill, Assoc. Prof., Évry
<i>Master</i>	<i>Multi-class differential analysis with fused-Anova</i>
2011	GEN YANG (3 months) École Nationale Supérieure d'Informatique pour l'Industrie et l'Entreprise (ENSIIE)
<i>Supervision</i>	50% with Christophe Ambroise, Prof., Évry
<i>Master</i>	<i>Hierarchical Lasso and group-Lasso for gene selection</i>
2011	AURORE MOUTARDE (5 months) MIGS, Université de Bourgogne
<i>Supervision</i>	50% with Yves Grandvalet, Senior Researcher, UTC
<i>Master</i>	<i>Développements algorithmiques dans les méthodes de régression pénalisée appliquées à la sélection de gènes</i>
2010	CYRILLE LONGIN (6 months) EGOISt, Université de Rouen
<i>Master</i>	<i>Caractérisation automatique de modules fonctionnels dans les réseaux de régulation</i>
2009	CAMILLE CHARBONNIER (5 months) École Nationale de la Statistique et de l'Administration (ENSAE)
<i>Supervision</i>	50% with Christophe Ambroise, Prof., Évry
<i>Master</i>	<i>ℓ_1 penalization and application to the inference of sparse dynamic regulation networks</i>
2008	ALEXANDER SMITH (6 months) AgroCampusOuest
<i>Supervision</i>	50% with Christophe Ambroise, Prof., Évry
<i>Master</i>	<i>Développement d'une nouvelle méthode d'estimation de réseaux de régulation</i>

TEACHING ACTIVITIES

Approximately 1500 hours of teachings given various schools and universities: Université d'Évry, AgroParis-Tech, École Nationale Supérieure d'Informatique pour l'Industrie et l'Entreprise (ENSIIE), École Nationale de la Statistique et de l'Analyse de l'Information (ENSAI), Université de Technologie de Compiègne, Université Paris-Sud, Université Paris Dauphine.

2017-18 <i>M2</i> <i>web</i>	AN INTRODUCTION TO GRAPH ANALYSIS AND MODELING (18h course/practicals) Descriptive Analysis of networks, Stochastic Bloc Model, Graphical Lasso http://julien.cremeriefamily.info/teachings_ensai_networks.html
2017 <i>M2</i>	A SHORT INTRODUCTION TO CONVEX OPTIMIZATION (9h de cours) (sub)-gradient methods, Newton method, Proximal methods
2015-18 <i>M2</i> <i>web</i>	INTRODUCTION REGULARIZATION FOR REGRESSION (154h course/practicals) Ridge, Lasso, variable selection, model selection http://julien.cremeriefamily.info/teachings_M1MINT_Reg.html
2016 <i>MSc</i>	LINEAR MIXED MODEL(30h course/practicals) Mixed and random effects model, repeated-measurements, application in agronomy
2010,15,16 <i>undergraduate</i>	LINEAR MODEL AND EXTENSION(192h course/practicals) Fisher test, ANOVA, Linear regression, generalized linear model, Smoothing splines
2012, 2015 <i>undergraduate</i> <i>web</i>	R PROGRAMMING AND STATISTICS(60h course/practicals) Data and control structures, Hypothesis testing, Linear model http://julien.cremeriefamily.info/teachings_L3BI_ISV51.html
2008, 2015 <i>undergraduate</i>	INTRODUCTION TO MATRIX ALGEBRA AND DATA ANALYSIS (18h course, 38h practicals) Linear system, Matrix factorization, Spectral decomposition, PCA
2010,12,15 <i>undergraduate</i>	SHORT PROJECT IN MATHEMATICS AND STATISTICS (110h course/practicals) Penalized regression, Numerical analysis, Simulation, Optimization
2008–11 <i>undergraduate</i>	BASIC MATHEMATICS (112h practicals) Continuity, Differentiation, Integration, Taylor Series, ODE
2005–11 <i>undergraduate</i>	PROBABILITY AND STATISTIC (39h course, 339h practicals) Random variables, Random Vectors, Independence, Conditioning, Convergence; Inference, Hypothesis Testing, Confidence Intervals
2008–10 <i>graduated/undergraduate</i>	MATHEMATICAL MODELS FOR BIOLOGY (9h course, 35h practicals) dynamic population models, Lokta-Volterra; sequence analysis, Markov models.
2009 <i>undergraduate</i>	AN INTRODUCTION TO MAPLE (36h practicals) Calculus, basic mechanics, Maple
2007–09 <i>MSc</i>	NUMERICAL METHODS FOR EDP (66h practicals) Euler, Runge-Kutta and Newton methods, Scilab
2003,07 <i>MSc</i>	NUMERICAL ANALYSIS (58h practicals) Linear system, Least squares, Numerical integration, Interpolation, ODE
2004,06 <i>MSc</i>	OPERATIONAL RESEARCH(50h practicals) Graphs, Combinatorial optimization, Algorithm, Complexity
2005 <i>postgraduate</i>	INTRODUCTION TO L ^A T _E X (12h course/practicals) Typography basics, Typesetting math, Bibliography, Index, Style-sheet

PAPERS

PREPRINT

- [PP1] J. Chiquet, M. Mariadassous, and S. Robin, *Variational inference for sparse network reconstruction from count data*.
- [PP2] T. Tabouy, P. Barbillon, and J. Chiquet, *Variational inference for stochastic block models from sampled data*.

JOURNAL PAPERS

- [JP1] J. Chiquet, M. Mariadassous, and S. Robin, *Variational inference for probabilistic poisson pca*, Annals of Applied Statistics (to appear), 2018.
- [JP2] M. Perrot, C. Lévy-Leduc, J. Chiquet, L. Sansonnet, M. Brégère, M.-P. Étienne, S. Robin, and G. Genta-Gouve, *A multivariate variable selection approach for analyzing lc-ms metabolomics data*, SAGMB, 2018, URL <https://doi.org/10.1515/sagmb-2017-0077>.
- [JP3] M. Perrot, C. Lévy-Leduc, L. Sansonnet, and J. Chiquet, *Variable selection in multivariate linear models with high-dimensional covariance matrix estimation*, J. Multivar. Anal., 166:pp. 78–97, 2018, URL <https://doi.org/10.1016/j.jmva.2018.02.006>.
- [JP4] V. Brault, J. Chiquet, and C. Lévy-Leduc, *Efficient block boundaries estimation in block-wise constant matrices: An application to hic data*, Electron. J. Statist., 11(1):pp. 1570–1599, 2017, doi:10.1214/17-EJS1270.
- [JP5] J. Chiquet, P. Gutierrez, and G. Rigail, *Fast tree inference with weighted fusion penalties*, Journal of Computational and Graphical Statistics, pp. 205–216, 2017, URL <http://dx.doi.org/10.1080/10618600.2015.1096789>.
- [JP6] Y. Grandvalet, J. Chiquet, and C. Ambroise, *Sparsity by worst-case penalties*, 2017.
- [JP7] J. Chiquet, Y. Grandvalet, and G. Rigail, *On coding effects in regularized categorical regression*, Statistical Modelling, (3):pp. 228–237, 2016, URL <http://dx.doi.org/10.1177/1471082X16644998>.
- [JP8] J. Chiquet, T. Mary-Huard, and S. Robin, *Structured regularization for conditional Gaussian graphical models*, Statistics and Computing, (3):pp. 789–804, 2016, URL <http://dx.doi.org/10.1007/s11222-016-9654-1>.
- [JP9] P. Latouche, P.-A. Mattei, C. Bouveyron, and J. Chiquet, *Combining a relaxed EM algorithm with Occam’s razor for Bayesian variable selection in high-dimensional regression*, Journal of Multivariate Analysis, 2016, URL <http://dx.doi.org/10.1016/j.jmva.2015.09.004>.
- [JP10] T. Picchetti, J. Chiquet, M. Elati, P. Neuvial, R. Nicolle, and E. Birmelé, *A model for gene deregulation detection using expression data*, BMC Systems Biology, 2015, URL <http://bmcystbiol.biomedcentral.com/articles/10.1186/1752-0509-9-S6-S6>.
- [JP11] B. Chaloub, F. Denoed, S. Liu, S. Parkin, H. Tang, W. X., J. Chiquet, and 76 more, *Early allopolyploid evolution in the post-neolithic Brassica napus oilseed genome*, Science, (6199), 2014, URL <http://www.sciencemag.org/content/345/6199/950>.
- [JP12] H. Chelaifa, V. Chagué, S. Chalabi, I. Mestiri, D. Arnaud, D. Deffains, Y. Lu, H. Belcram, V. Huteau, J. Chiquet, O. Coriton, J. Just, J. Jahier, and B. Chalhoub, *Prevalence of gene expression additivity in genetically stable wheat allohexaploids*, New Phytologist, 197(3):pp. 730–736, 2013, URL <http://onlinelibrary.wiley.com/doi/10.1111/nph.12108/full>.
- [JP13] J. Chiquet, Y. Grandvalet, and C. Charbonnier, *Sparsity in sign-coherent groups of variables via the cooperative-lasso*, The Annals of Applied Statistics, 6(2):pp. 795–830, 2012, URL <http://projecteuclid.org/euclid.aoas/1339419617>.
- [JP14] J. Chiquet, Y. Grandvalet, and C. Ambroise, *Inferring multiple graphical models*, Statistics and Computing, 21(4):pp. 537–553, 2011, URL <http://dx.doi.org/10.1007/s11222-010-9191-2>.

- [JP15] C. Charbonnier, J. Chiquet, and C. Ambroise, *Weighted-lasso for structured network inference from time course data*, *Statistical Applications in Genomics and Molecular Biology*, 9, 2010, URL <https://doi.org/10.2202/1544-6115.1519>.
- [JP16] C. Ambroise, J. Chiquet, and C. Matias, *Inferring sparse Gaussian graphical models with latent structure*, *Electronic Journal of Statistics*, 3:pp. 205–238, 2009, URL <http://projecteuclid.org/DPubS?service=UI&version=1.0&verb=Display&handle=euclid.ejs/1238078905>.
- [JP17] J. Chiquet, N. Limnios, and M. Eid, *Piecewise deterministic Markov processes applied to fatigue crack growth modelling*, *Journal of Statistical Planning and Inference*, 139(5):pp. 1657–1667, 2009, URL <http://dx.doi.org/10.1016/j.jspi.2008.05.034>.
- [JP18] J. Chiquet, A. Smith, G. Grasseau, C. Matias, and C. Ambroise, *SIMoNe: Statistical Inference for MODular NETworks*, *Bioinformatics*, 25(3):pp. 417–418, 2009, URL <http://dx.doi.org/10.1093/bioinformatics/btn637>.
- [JP19] J. Chiquet and N. Limnios, *A method to compute the transition function of a piecewise deterministic Markov process*, *Statistics and Probability Letters*, 78(12):pp. 1397–1403, 2008, URL <http://dx.doi.org/10.1016/j.spl.2007.12.016>.
- [JP20] J. Chiquet, N. Limnios, and M. Eid, *Modelling and estimating stochastic dynamical systems with Markovian switching*, *Reliability Engineering and System Safety*, 93(12):pp. 1801–1808, 2008, URL <http://dx.doi.org/10.1016/j.ress.2008.03.016>.
- [JP21] J. Chiquet and N. Limnios, *Estimating stochastic dynamical systems driven by a continuous-time jump Markov process*, *Methodology and Computing in Applied Probability*, 8:pp. 431–447, 2006, URL <http://www.springerlink.com/content/e8736480p2027113/>.

BOOK CHAPTERS

- [BC1] J. Chiquet, R. Rigai, and M. Sundqvist, *Gene Regulatory Networks: Methods and Protocols (Guido Sanguinetti and Vân Anh Huynh-Thu, eds.)*, chap. A multiattribute Gaussian graphical model for inferring multiscale regulatory networks: an application in breast cancer, Springer Science+Business Media, LLC, part of Springer Nature, 2019, URL https://doi.org/10.1007/978-1-4939-8882-2_6.
- [BC2] A. Vacher, C. Tamaddoni-Nezhad, S. Kamenova, N. Peyrard, L. Schwaller, J. Julien Chiquet, M. Smith, J. Vallance, Y. Moalic, R. Sabbadin, V. Fievet, B. Jakuschkin, and D. Bohan, *Advances in Ecological Research*, chap. Learning Ecological Networks from Next-Generation Sequencing Data, 2016.
- [BC3] M. Jeanmougin, C. Charbonnier, M. Guedj, and J. Chiquet, *Probabilistic graphical models dedicated to applications in genetics, genomics and postgenomics*, chap. Network inference in breast cancer with Gaussian graphical models and extensions, 2014, URL <http://ukcatalogue.oup.com/product/9780198709022.do>.
- [BC4] J. Chiquet and N. Limnios, *Stochastic Reliability and Maintenance Modeling*, vol. 9 of *Springer Series in Reliability Engineering*, chap. Dynamical systems with semi-markovian perturbations and their use in structural reliability, Springer, 2013, URL <http://www.springer.com/engineering/production+engineering/book/978-1-4471-4970-5>.
- [BC5] J. Chiquet and N. Limnios, *Mathematical methods in survival analysis, reliability and quality of life*, chap. Reliability of stochastic dynamical systems applied to fatigue crack growth modelling, Wiley/ISTE, 2008, URL <http://eu.wiley.com/WileyCDA/WileyTitle/productCd-1848210108,subjectCd-ST80.html>.

POPULAR SCIENCE

- [PS1] J. Chiquet, *Statistique et génome: réseaux biologiques*, *La gazette des mathématiciens*, 130:pp. 76–82, 2011, URL <http://smf4.emath.fr/en/Publications/Gazette/2011/130/>.

TECHNICAL REPORTS

- [R1] J. Chiquet, *Pascal : Probabilistic fracture mechanics applied safety computing ageing lwr*, Tech. Rep. SERMA/LCA/RT/05-3459, CEA, 2005.
- [R2] J. Chiquet, *Équations différentielles stochastiques appliquées à la modélisation de la fatigue des matériaux*, Tech. Rep. SERMA/LCA/RT/05-3583, CEA, 2005.
- [R3] J. Chiquet, *Vers le développement de modèles aléatoires pour le vieillissement des structures : une approche stochastique*, Tech. Rep. SERMA/LCA/RT/04-3417, CEA, 2004.

THESIS

- [TS1] J. Chiquet, *Contributions to sparse methods for complex data analysis*, Habilitation thesis, Université d'Évry Val-d'Essonne, 2015, URL <https://tel.archives-ouvertes.fr/tel-01288976/>.
- [TS2] J. Chiquet, *Modélisation et estimation des processus de dégradation avec application en fiabilité des structures*, Ph.D. thesis, Université de Technologie de Compiègne, 2007, URL <http://tel.archives-ouvertes.fr/tel-00165782>.
- [TS3] J. Chiquet, *Estimation des températures journalières à l'aide de techniques markoviennes*, Master's thesis, Université de Technologie de Compiègne, 2003, URL http://julien.cremeriefamily.info/doc/master_thesis.pdf.

TALKS

CONTRIBUTED TALKS (INTERNATIONAL)

- [CI1] M. Champion, J. Chiquet, P. Neuvial, M. Elati, and E. Birmelé, *Identification of deregulated transcription factors involved in subtypes of cancers*, in International Conference on Bioinformatics (InCOB), 2017.
- [CI2] V. D. J. Chiquet, G. Rigail, *aricode: a package for efficient computations of standard clustering comparison measures*, in SMPGD: Statistical Methods for Post-Genomic Data, 2017a, 2017b.
- [CI3] C. Ambroise, J. Chiquet, and M. Szafranski, *A greedy great approach to learn with complementary structured datasets*, in Greed is Great, ICML Workshop, Lille, France, 2015.
- [CI4] J. Chiquet, P. Gutierrez, and G. Rigail, *Weighted fusion penalties for tree inference and its oracle properties*, in Proceedings of the MLCB NIPS'14 workshop, Montréal, 2014.
- [CI5] D. Laloé, F. Jaffrezic, J. Chiquet, and M. Gaultier, *FLPCA: a fused-Lasso PCA-based approach to identify footprints of selection in differentiated populations from dense to SNP data: applications to human and cattle data*, in Proceedings of the International Biometric Conference, Florence, Italy, 2014.
- [CI6] J. Chiquet, T. Mary-Huard, and S. Robin, *Multi-trait genomic selection via multivariate regression with structured regularization*, in Proceedings of the MLCB NIPS'13 workshop, South Lake Tahoe, 2013.
- [CI7] P. Gutierrez, G. Rigail, and J. Chiquet, *A fast homotopy algorithm for a large class of weighted classification problems*, in Proceedings of the MLCB NIPS'13 workshop, South Lake Tahoe, 2013.
- [CI8] J. Chiquet, Y. Grandvalet, and C. Charbonnier, *Sparsity with sign-coherent groups of variables via the cooperative-lasso*, in Proceedings of SPARS'11, Edinburgh, 2011.
- [CI9] J. Corvol, C. Vrignaud, K. Tahiri, F. Cormier, C. Charbonnier, F. Charbonnier-Beaupel, W. Carpentier, A. Patat, E. Mascioli, Y. Chiquet, J. Grandvalet, C. Ambroise, G. Edan, and E. Zanelli, *Gene expression signature in whole blood after treatment with amino acid copolymer pi-2301 in multiple sclerosis*, in European Committee for Treatment and Research in Multiple Sclerosis, 2010.
- [CI10] Y. Grandvalet, J. Chiquet, and C. Ambroise, *Inferring multiple regulation networks*, in Proceedings of the MLCB NIPS'10 Workshop, Vancouver, 2010.
- [CI11] J. Chiquet, N. Limnios, and M. Eid, *Reliability evaluation of a dynamical system in semi-Markovian environment*, in Proceedings of IWAP'08, Compiègne, 2008.

- [CI12] J. Chiquet, C. Matias, and C. Ambroise, *Penalized maximum likelihood approach for sparse Gaussian graphical models with hidden structure*, in Proceedings of IWAP'08, Compiègne, 2008.
- [CI13] J. Chiquet, N. Limnios, and M. Eid, *Modelling the reliability of degradation processes through Markov renewal theory*, in Proceedings of ESREL'07, Stavanger, 2007.
- [CI14] J. Chiquet, N. Limnios, and M. Eid, *Modeling and estimating stochastic dynamical systems with Markov switching*, in Proceedings of ESREL'06, Estoril, 2006.

CONTRIBUTED TALKS (FRENCH)

- [CN1] F. Guinot, M. Szafranski, J. Chiquet, and C. Ambroise, *Une approche hiérarchique de la recherche d'interactions entre données omiques*, in actes des 50^e journées françaises de statistique, Saclay, 2018.
- [CN2] A. Hulot, J. Chiquet, F. Jaffrezic, and G. Rigaiil, *Fused-anova: une méthode de clustering en grande dimension*, in actes des 50^e journées françaises de statistique, Saclay, 2018.
- [CN3] M. Perrot, C. Lévy-Leduc, J. Chiquet, and L. Sansonnet, *Sélection de variables dans le modèle linéaire multivarié en grande dimension avec prise en compte de la dépendance*, in actes des 50^e journées françaises de statistique, Saclay, 2018.
- [CN4] M. Sundqvist, J. Chiquet, L. de Koning, T. Dubois, and G. Rigaiil, *Cluster stability for more robust classification in triple-negative breast cancer*, in actes des 50^e journées françaises de statistique, Saclay, 2018.
- [CN5] T. Tabouy, P. Barbillon, and J. Chiquet, *Identifiabilité du modèle à blocs stochastiques en présence de données manquantes*, in actes des 50^e journées françaises de statistique, Saclay, 2018.
- [CN6] M. Perrot-Dockes, C. Lévy-Leduc, J. Chiquet, and L. Sansonnet, *Modèle linéaire multivarié parcimonieux avec estimation de covariance : une application à des données de métabolomique*, in actes des 49^e journées françaises de statistique, Avignon, 2017.
- [CN7] T. Tabouy, P. Barbillon, and J. Chiquet, *Inférence du modèle à blocs stochastiques en présence de données manquantes*, in actes des 49^e journées françaises de statistique, Avignon, 2017.
- [CN8] V. Brault, J. Chiquet, and C. Lévy-Leduc, *Détection rapide des frontières des blocs d'une matrice constante par blocs bruitée*, in actes des 48^e journées françaises de statistique, Montpellier, 2016.
- [CN9] M.-P. Étienne, J. Chiquet, S. Donnet, and A. Samson, *Méthode conjointe de segmentation-classification pour des modèles d'écologie du déplacement*, in actes des 49^e journées françaises de statistique, Avignon, 2016.
- [CN10] T. Mary-Huard, J. Chiquet, A. Céliste, and M. Fuchs, *Formule exacte pour la validation croisée dans le cadre de la régression "pool-sample"*, in actes des 47^e journées françaises de statistique, Lille, 2015.
- [CN11] P.-A. Mattei, P. Latouche, C. Bouveyron, and J. Chiquet, *Une relaxation continue du rasoir d'Occam pour la régression en grande dimension*, in actes des 47^e journées françaises de statistique, Lille, 2015.
- [CN12] J. Chiquet, T. Mary-Huard, and S. Robin, *Inférence jointe de la structure de modèles graphiques gaussiens*, in actes des 46^e journées françaises de statistique, Rennes, 2014.
- [CN13] J. Plassais, J. Chiquet, A. Cervino, and C. Ambroise, *A comparison of two statistical methods combining high-throughput data to predict the level of disease activity in patients with rheumatoid arthritis*, in JOBIM'12, Rennes, 2012.
- [CN14] C. Charbonnier, J. Chiquet, and C. Ambroise, *Weighted-lasso for structured network inference for time-course data*, in JOBIM'10, Montpellier, 2010.
- [CN15] J. Chiquet, Y. Grandvalet, and C. Ambroise, *Inferring multiple graphical structures*, in Workshop MODGRAPHII, JOBIM'10, Montpellier, 2010.
- [CN16] Y. Grandvalet, J. Chiquet, and C. Ambroise, *Inférence jointe de la structure de modèles graphiques gaussiens*, in actes de CAp'10, Clermont-Ferrand, 2010.
- [CN17] J. Chiquet, C. Charbonnier, and C. Ambroise, *SIMoNe : Statistical Inference for Modular Networks*, in Workshop MODGRAPH, JOBIM'09, Nantes, 2009.

- [CN18] J. Chiquet, N. Limnios, and M. Eid, *Processus markoviens de saut dans les équations différentielles stochastiques appliquées à la modélisation de la fatigue des matériaux*, in Congrès Français de Mécanique'05, Troyes, 2005.
- [CN19] J. Chiquet, N. Limnios, T. Yurizin, and M. Eid, *Modèle stochastique de taille critique de fissure dans les structures soumises au vieillissement par irradiation*, in Congrès Français de Mécanique'05, Troyes, 2005.

INVITED TALKS

- [IT1] *Fast tree inference with weighted fusion penalties*, Computational Intelligence methods for Bioinformatics and Biostatistics (CIBB), Naples, 2015.
- [IT2] *Sparse Gaussian graphical models for biological network inference*, ISI World Statistics Congress, Hong-Kong, 2013.
- [IT3] *Sparse Gaussian graphical models for biological network inference*, StatLearn'13, Bordeaux, 2013.
- [IT4] *Sparsity with sign-coherent groups of variables via the cooperative-lasso*, Statistics and Modeling for Complex Data, Marne-la-Vallée, 2011.
- [IT5] *Learning the structure of Bayesian networks with application in post-genomics*, International Workshop on Bayesian Networks and Applications in Post-genomics, Paris, 2010.
- [IT6] *Penalized maximum likelihood approach for sparse Gaussian graphical models with hidden structure*, International Workshop on Applied Probability, Compiègne, 2008.
- [IT7] *Reliability evaluation of a dynamical system in semi-Markovian environment*, International Workshop on Applied Probability, Compiègne, 2008.
- [IT8] *Modelling degradation processes through a piecewise deterministic Markov process*, Mathematical Methodologies for Operational Risk, Eindhoven, 2007.
- [IT9] *Modelling degradation processes through a piecewise deterministic Markov process with applications to fatigue crack growth*, Recent Advances in Stochastic Operations Research II, Nagoya, 2007.

RESEARCH SCHOOLS AND TUTORIALS

- [ST1] J. Chiquet, *Network inference and penalisation: lectures*, Surf 64: Advanced OMIC Profiling and Integration, <http://www.imperial.ac.uk/school-public-health/study/short-courses/surf-64/>, London, 2018.
- [ST2] J. Chiquet, *Network inference and penalisation: tutorial*, Surf 64: Advanced OMIC Profiling and Integration, https://github.com/benoit-liquet/XP_Practice_SURF64, Anglet, 2017.
- [ST3] J. Chiquet, *Perspective for network inference for microbiological data*, PathoBiome MEM subgroup meeting, INRA, Rennes, 2017.
- [ST4] J. Chiquet, *Tutorial on network inference*, STRATEGe: MIA Methodological Network for omic data in Ecology, AgroParisTech, Paris, 2017.
- [ST5] J. Chiquet, *Tutorial on network inference*, Conference CARTABLE, INRA Toulouse, 2016.
- [ST6] J. Chiquet, *From gene expression to genomic network*, "Saclay Plant Science" Summer School, https://www6.inra.fr/saclay-plant-sciences_eng/Teaching-and-training/Summer-schools/Summer-School-2016, 2016.
- [ST7] J. Chiquet, *Introduction to statistical analysis with R*, CNRS formation, <https://cnrsformation.cnrs.fr/>, 2016.
- [ST8] J. Chiquet, *Perspective for network inference for microbiological data*, MEM methodological network, Paris, 2016.
- [ST9] J. Chiquet, *Statistics and classification for genomic data*, Bioinformatics Summer School in Angers, <http://summerschools.univ-angers.fr/en/index/about-schools/schools/bioinformatics.html>, 2016.
- [ST10] J. Chiquet, *Application of sparse convex methods in genomics*, Summer School "BigOptim", <http://www.gipsa-lab.fr/summerschool/BigOptim>, 2015.
- [ST11] J. Chiquet, *Introduction to regularization methods in life science*, Cours de 3^e cycle, École doctorale ABIES/AgroParisTech, 2012, 2013, 2014, 2015.

SEMINARS AND ORAL COMMUNICATIONS

- [ST1] Séminaire de Probabilité et Statistiques, LMAP, Anglet, 2018.
- [ST2] Pathobiome 2018: Pathogens in microbiota in hosts, Ajaccio, Corsica, 2018.
- [ST3] Séminaire de Probabilité et Statistiques, Institut Élie Cartan de Lorraine, 2018.
- [ST4] Recent Computational Advances in Metagenomics (RCAM'17)", Insitut Pasteur, 2017.
- [ST5] Séminaire joint AgroParisTech, Paris, 2017, 2015, 2014, 2013a, 2013b.
- [ST6] Recent advances in Segmentation Problems, AgroParisTech, 2017.
- [ST7] MEM INRA metaprogramm: MEM days, Paris, 2017.
- [ST8] SMPGD: Statistical Methods for Post-Genomic Data, Paris, 2017a, 2017b.
- [ST9] Séminaire LMAC, UTC, Compiègne, 2016.
- [ST10] Séminaire MaIAGE, INRA, Jouy, 2016.
- [ST11] Séminaire P-MAG, Paris, 2016.
- [ST12] Séminaire Télécom Paris, Paris, 2016.
- [ST13] Séminaire parisien de statistiques, Paris, 2015, 2011.
- [ST14] Séminaire du groupe SSB (Statistics for Systems Biology), Paris, 2015, 2014, 2012, 2011, 2010.
- [ST15] Séminaire du MAP5, Paris, 2014.
- [ST16] Séminaire du SAMM, Paris 1, Paris, 2014.
- [ST17] SMPGD: Statistical Methods for Post-Genomic Data, Paris, 2014a, 2014b.
- [ST18] Modal team workshop, Lille, 2014, 2013.
- [ST19] Séminaire du laboratoire de mathématiques appliquées de Toulouse, Toulouse, 2013.
- [ST20] GDR Modélisation bioinformatique en biologie et médecine, Nice, 2008.
- [ST21] Groupe de travail en statistique du laboratoire Raphaël Salem, Rouen, 2007,2016.
- [ST22] Séminaire du Laboratoire Statistique et Génome, Évry, 2007.
- [ST23] Séminaire du Laboratoire de Mathématiques Appliqués, Compiègne, 2007.
- [ST24] Mathematical Methods for Survival Analysis, Reliability and Quality of Life, Paris, 2006.

SOFTWARE

- [SW1] J. Chiquet, V. Dervieux, and G. Rigaiil, **aricode: a package for efficient computations of standard clustering comparison measures**, 2018.
<https://CRAN.R-project.org/package=aricode>.
- [SW2] J. Chiquet, M. Mariadassou, and S. Robin, **PLNmodels: Poisson lognormal models**, 2018.
<https://github.com/jchiquet/PLNmodels>.
- [SW3] P. Gutierrez, G. Rigaiil, and J. Chiquet, **Fused-Anova**, 2018.
<https://github.com/jchiquet/fusedanova>.
Fused-ANOVA is a penalized method that solves the one-way ANOVA problem by collapsing the coefficients of K conditions. It reconstructs a balanced tree structure between the condition with a homotopy algorithm in $O(K \log(K))$.
- [SW4] T. Tabouy, P. Barbillon, and J. Chiquet, **missSBM: handling missing data in the Stochastic Bloc Model**, 2018.
<https://github.com/jchiquet/missSBM>.

- [SW5] J. Chiquet, **SPRING: Structured selection of Primordial Relationships IN the General linear model**, 2017.
<https://github.com/jchiquet/spring>.
This package fits multivariate regression models using sparse conditional Gaussian graphical modeling with Laplacian regularization.
- [SW6] M. Perrot, C. Levy-Leduc, and J. Chiquet, **MultiVarSel: Variable Selection in the Multivariate Linear Model**, 2017.
<https://CRAN.R-project.org/package=MultiVarSel>.
- [SW7] V. Brault and J. Chiquet, **blockseg: two Dimensional Change-Points Detection**, 2016.
<https://CRAN.R-project.org/package=blockseg>.
Segments a matrix in blocks with constant values. The underlying algorithm is a Lars-type algorithm where all the matrix operation can be computed explicitly.
- [SW8] C. Bouveyron, J. Chiquet, P. Latouche, and P.-A. Mattei, **spinyReg: Sparse Generative Model and Its EM Algorithm**, 2015.
<https://cran.r-project.org/web/packages/spinyReg/>.
Implements a generative model that uses a spike-and-slab like prior distribution obtained by multiplying a deterministic binary vector. Such a model allows an EM algorithm, optimizing a type-II log-likelihood.
- [SW9] J. Chiquet, **Quadrupen: Sparsity by Worst-Case Quadratic Penalties**, 2012.
<http://cran.r-project.org/web/packages/quadrupen/>.
This package fits classical sparse regression models with efficient active set algorithms by solving quadratic problems. It also provides a few methods for model selection purposes (cross-validation, stability selection).
- [SW10] J. Chiquet, **Scoop: Sparse Cooperative Regression**, 2011.
<http://julien.cremierfamily.info/scoop>.
This R package fits coop-Lasso, group-Lasso and tree-group Lasso variants for linear regression and logistic regression. The cooperative-Lasso (in short, coop-Lasso) may be viewed as a modification of the group-Lasso penalty that promotes sign coherence and that allows zeros within groups.
- [SW11] J. Chiquet, G. Grasseau, C. Ambroise, and C. Charbonnier, **SIMoNe: Statistical Inference for MODular NETworks**, 2010.
<http://julien.cremierfamily.info/simone>.
SIMoNe (Statistical Inference for MODular NETworks) is an R package which implements the inference of co-regulated networks based on partial correlation coefficients from either steady-state or time-course transcriptomic data. This package can deal with samples collected in different experimental conditions. In this particular case, multiple related graphs are inferred simultaneously. The underlying statistical tools enter the framework of Gaussian graphical models (GGM). Basically, the algorithm searches for a latent clustering of the network to drive the selection of edges through an adaptive l1-penalization of the model likelihood.