Piotr Zwiernik

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Personal information

Born on 29 July 1979 in Warsaw (Poland). Polish citizen.

Married, two sons born in 2013 and 2016.

Current Academic Positions and Affiliations

2021- Associate Professor in the Department of Statistical Sciences, University of Toronto, Canada.

2021- Associate Research Professor at the Barcelona School of Economics, Barcelona, Spain. (on leave)

2021- Associate Professor in the Department of Economics and Business, Universitat Pompeu Fabra, Barcelona, Spain. (on leave)

Other Affiliations

2022- Associate Professor in the Department of Mathematics (non-budgetary cross-appointment), University of Toronto, Canada.

2021- Affiliated Professor at Data Sciences Institute, University of Toronto, Toronto, Canada.

2016- Affiliated Professor at BSE Data Science Center, Barcelona, Spain.

Past Employment

2016-2021 Assistant Professor in the Department of Economics and Business, Universitat Pompeu Fabra, Barcelona, Spain.

2015-2016 Marie Skłodowska-Curie Fellow at the University of Genoa, Italy.

2013 - 2015 Marie Skłodowska-Curie Fellow at the University of California, Berkeley.

2012-2013 Postdoctorate Researcher at TU Eindhoven, The Netherlands.

7/2011 - 12/2011 Postdoctorate Fellow at IPAM, Los Angeles, US for its program on "Mathematical and Computational approaches in High-Throughput Genomics".

1/2011 - 6/2011 AXA-IML Postdoctorate Fellow at the Mittag-Leffler Institute in Stockholm, Sweden for the program on "Algebraic Geometry with a view towards application".

2007 - 2010 Teaching Assistant at the University of Warwick. Teaching: ST111/112 Probability, ST213 Mathematics of Random Events, ST216 Mathematical Statistics A, ST217 Mathematical Statistics B.

2005 - 2007 Teaching Assistant at Warsaw University and Research Assistant at Warsaw School of Economics.

2000 - 2003 Sport journalist in Gazeta Wyborcza, Warsaw, Poland.

Education

2007–2010 PhD in Statistics at the University of Warwick, the title obtained in February 2011.
Advisors: Diane Maclagan (mathematics), Jim Q. Smith (statistics).

2006 MSc in Mathematics, Warsaw University.
Advisor: Jarosław Wiśniewski.

2003 MSc in Economics. Warsaw School of Economics.
Advisor: Monika Dędys.

Research Interests

Graphical models, covariance matrix estimation, convex analysis, tensors, combinatorial and geometric methods in statistics.

Grants and Awards

Individual grants

2023 Natural Sciences and Engineering Research Council of Canada (NSERC) Discovery Grant, 200,000 CAD for 5 years. Grant: RGPIN-2023-03481.

2018 Seed Grant from Barcelona Graduate School of Economics, 10,000 EUR for 6 months. Grant: SG2019-04-Zwiernik.

2018 Ramón y Cajal Fellowship (ranked 1st in Mathematics), 308,600 EUR, a 5-year individual grant from the Spanish Ministry of Economy, Industry and Competitiveness.

2017 Beatriu de Pinós Fellowship, 82,000 EUR, a 2-year individual grant from the Catalan Agency for Management of University and Research Grants.

2011 Marie Curie International Outgoing Fellowship for Career Development, 264,639 EUR for a 3-year individual project (from the European Commission CORDIS). Grant: PIOF-GA-2011-300975.

2009 American Study and Student Exchange Committee (ASSEC): financial support to assist to a short time visit at the University of California, Berkeley, CA, US (1. - 18. October 2009).

Group research projects (co-PI or not PI)

2024-2025 CNRS Mathématiques International Emerging Actions (IEA), 10,000 EUR, project "Graphical models and applications", 3 researchers.

2022-2025 Fundación BBVA, 149,978 EUR, project "Modern challanges in high-dimensional data analysis", 6 researchers, 3 years.

2022-2025 Huawei Technologies (Ireland), 1,964,250 EUR, project "High Dimensional Statistics for Network Structured Data", 5 researchers, 3 years.

2019-2021 Ministerio de Economía y Competitividad (MINECO), 141,812 EUR, project "Prediction, inference, and computation in structured high-dimensional models", 6 researchers, 3 years. Grant: PGC2018-101643-B.

2018-2019 Fundación BBVA, 100,000 EUR, project "High-dimensional problems in structured probabilistic models", 5 researchers, 2 years.

2016-2018 Ministerio de Economía y Competitividad (MINECO), 52,998 EUR, project "Estimation of latent networks", 5 researchers, 3 years. Grant: MTM2015-67304-P.

Editorial activities

Current AE appointments:

2023- Journal of Royal Statistical Society, Series B

2018- Biometrika

2016- Scandinavian Journal of Statistics

2014- Algebraic Statistics.

Program committees:

2024 Area Chair for UAI.

2023 Area Chair for UAI.

2022 Area Chair for UAI.

2021 Program Committee Member for ICML. Area Chair for UAI.

2020 Program Committee Member for ICML and NeurIPS. Area Chair for UAI.

2019 Program Committee Member for ICML.

2018 Program Committee Member for ICML.

2017 Program Committee Member for ICML.

Other editorial duties:

Guest editor, special issue of Journal of Algebraic Statistics for the Algebraic Statistics conference, Genoa, June, 2015.

Organizational activities

Administrative work

2022- Associate Chair of Research, Department of Statistical Sciences, University of Toronto.

2020-2022 Coordinator of the Advanced Quantitative Methods undergraduate study track, Department of Economics and Business, Universitat Pompeu Fabra.

2019-2022 Co-director of the Master in Data Science, Barcelona Graduate School of Economics.

Seminar series organized

2022- Brown Bag Seminar at University of Toronto.

2021-2023 Methods and Theory Seminar at University of Toronto.

2020-2021 Algebraic Statistics Online Seminar.

2016-2021 Statistics Seminar at Universitat Pompeu Fabra.

2015 Algebraic Statistics Meetings at University of Genoa.

2014 Algebraic Statistics Seminar at UC Berkeley.

Scientific programs organized

2023 IMSI program on Algebraic Statistics, Institute for Mathematical and Statistical Innovation, Chicago, USA.

2017 Monthly program on Algebraic and Combinatorial Phylogenetics, Barcelona, Spain.

Meetings organized

2021 Mathematical Statistics and Learning, Barcelona, Spain.

2018 Challenges and Methods of Modern Statistics, Italian-Polish Mathematical Meeting, Wrocław, Poland.

2018 High-dimensional statistics and random structures, Summer Forum 2018, Barcelona.

2018 BayesComp 2018, Barcelona.

2015 Algebraic Statistics 2015 (8-11 June 2015), Genoa, Italy.

2010 Workshop on Geometric and Algebraic Statistics, University of Warwick, April 2010.

Special sessions organized

2023 Algebraic Staistics, JSM 2023, Toronto, Canada

2020 Stochastic analysis and random structures, Barcelona Mathematical Days 2020, Barcelona, Spain.

2017 Graphical models, EMS 2017, Helsinki, Finland.

2015 Graphical models, EMS 2015, Amsterdam, The Netherlands.

Publications

Preprints (available on arXiv)

Entropic Covariance Models

Positivity in Linear Gaussian Structural Equation Models (with Asad Lodhia, Jan-Christian Hütter, Caroline Uhler)

Graphical model inference with external network data (with Jack Jewson, Li Li, Laura Battaglia, Stephen Hansen, and David Rossel)

Maximum Likelihood Estimation for Brownian Motion Tree Models Based on One Sample (with Michael Truell, Jan-Christian Hütter, Chandler Squires, and Caroline Uhler)

The identification problem for linear rational expectations models (with Majid Al-Sadoon).

The Dependence of Routine Bayesian Model Selection Methods on Irrelevant Alternatives (with Jim Q. Smith).

Main articles

Non-Independent Components Analysis (with Geert Mesters),to appear in Annals of Statistics.

Total positivity in multivariate extremes (with Frank Röttger and Sebastian Engelke), Annals of Statistics 2023, Vol. 51, No. 3, 962–1004.

Locally associated graphical models (with Steffen Lauritzen). Annals of Statistics 2022, Vol. 50, No. 5, 3009–3038.

Robust Estimation of Tree Structured Models (with Marta Casanellas and Marina Garrote-López). Bernoulli, 30(1), 2024, 1–21.

Dependence in elliptical partial correlation graphs (with David Rossell), Electronic Journal of Statistics, Vol. 15, No. 2, 2021, 4236–4263.

Learning partial correlation graphs and graphical models by covariance queries (with Gábor Lugosi, Jakub Truszkowski, and Vasiliki Velona), Journal of Machine Learning Research, 22(203):1-41, 2021.

Likelihood geometry of correlation models (with Carlos Améndola), *Le Matematiche* (special issue on Linear Spaces of Symmetric Matrices), 76(2), 2021, 559–583.

Total positivity in exponential families with application to binary variables (with Steffen Lauritzen and Caroline Uhler), *Annals of Statistics*, Vol. 49, No. 3, 2021, 1436–1459.

Estimating linear covariance models with numerical nonlinear algebra (with Bernd Sturmfels and Sascha Timme), *Algebraic Statistics*, 11(1), 2020, 31–52.

Brownian motion tree models are toric (with Bernd Sturmfels and Caroline Uhler). Kybernetika, Vol. 56 (special volume in memory of František Matúš), No. 6, 2020, 1154–1175.

Secant varieties of toric varieties arising from simplicial complexes (with M. Azeem Khadam and Mateusz Michałek), *Linear Algebra and its Applications*, 588, 2020, 428–457.

Maximum likelihood estimation in Gaussian models under total positivity (with Steffen Lauritzen and Caroline Uhler), *Annals of Statistics* 47(4), 2019, 1835–1863.

Maximum likelihood estimation of the Latent Class Model through model boundary decomposition (with Elizabeth Allman, Hector Baños Cervantes, Robin Evans, Serkan Hoşten, Kaie Kubjas, Daniel Lemke, and John Rhodes). Journal of Algebraic Statistics: Issue in honor of S. E. Fienberg, 10(1), 2019, 51–84.

Maximum likelihood estimation for linear Gaussian covariance models (with Caroline Uhler, Donald Richards), *Journal of the Royal Statistical Society Series B* 79(4), 2017, 1269-1292.

Total positivity in Markov structures (with Shaun Fallat, Steffen Lauritzen, Kayvan Sadeghi, Caroline Uhler, Nanny Wermuth), *Annals of Statistics* 45(3), 2017, 1152–1184.

Marginal likelihood and model selection for Gaussian latent tree and forest models (with Mathias Drton, Shaowei Lin, and Luca Weihs), *Bernoulli* 23(2), 2017, 1202–1232.

Automorphism groups of Gaussian Bayesian networks (with Jan Draisma), *Bernoulli* 23(2), 2017, 1102–1129.

Cremona linearizations of some classical varieties (with Ciro Ciliberto, Angie Cueto, Massimiliano Mella and Kristian Ranestad). In: Casnati G., Conte A., Gatto L., Giacardi L., Marchisio M., Verra A. (eds) From Classical to Modern Algebraic Geometry. Trends in the History of Science. Birkhäuser (2016).

The correlation space of Gaussian latent tree models and model selection without fitting (with John Aston, Nat Shiers, and Jim Q. Smith), Biometrika (2016) 103 (3): 531-545.

Exponential varieties (with Mateusz Michałek, Bernd Sturmfels, and Caroline Uhler), *Proceedings of the London Mathematical Society* (3) 112 (2016), no. 1, 27–56.

Binary distributions of concentric rings (with Nanny Wermuth and Giovanni Marchetti), *Journal of Multivariate Analysis*, 130 (2014), pp 252-260.

Tensors of nonnegative rank two (with Elizabeth Allman, John A. Rhodes and Bernd Sturmfels), *Linear Algebra and its Applications: Special issue on Statistics*, Volume 473 (2015), pp 37-53.

Secant cumulants and toric geometry (with Mateusz Michałek and Luke Oeding), *International Mathematics Research Notices*, Issue 12, 2015, pp 4019-4063.

Groups related to Gaussian graphical models (with Jan Draisma and Sonja Kuhnt), Annals of Statistics, Volume 41, Number 4 (2013), pp 1944-1969.

Binary cumulant varieties (with Bernd Sturmfels), Annals of Combinatorics, Volume 17, Issue 1 (2013), pp 229-250.

L-cumulants, L-cumulant embeddings and algebraic statistics. Journal of Algebraic Statistics. Volume 3 (2012), pp 11-43.

Tree-cumulants and the geometry of Bayesian tree models (with Jim Q. Smith), Bernoulli, Volume 18, Number 1 (2012), 290-321.

An Asymptotic Behaviour of the Marginal Likelihood for General Markov Models, J. of Machine Learning Research. Volume 12 (2011), pp 3283-3310.

Implicit inequality constraints in a binary tree model (with Jim Q. Smith), Electron. J. Statist, Volume 5 (2011), 1276-1312.

Books and book chapters

Latent tree models, in *Handbook of Graphical Models* (Editors: Mathis Drton, Steffen Lauritzen, Marloes Matthuis, Martin Wainwright), CRC Press, 2018.

Semialgebraic Statistics and Latent Tree Models, Monographs on Statistics and Applied Probability 146, Chapman&Hall, 2015.

Forecasting with Composite Coincident and Leading Indexes and the CLIMA Model. Case of Poland (with Piotr Białowolski, Maria Drozdowicz-Bieć, Robert Pater, Katarzyna Lada, Dawid Żochowski), SGH, Warsaw, 2007.

Secondary publications

Berg, J.B. van den, Castro, R., Draisma, J., Evers, J.H.M., Hendriks, M., Khimshiashvili, G., Krehel, O., Kryven, I., Mora, K., Szabó, B.T. & Zwiernik, P. (2012). *Non-imaging optics for LED-lighting*. Proceedings of the 84th European Study Group Mathematics with Industry, 30 January - 3 February 2012, Eindhoven, The Netherlands.

Piotr Białowolski, Piotr Zwiernik, Dawid Żochowski, *Modelling Inflation using Markov Switching Models. Case of Poland.*, in M. Drozdowicz-Bieć ed., "Business Surveys, Business Cycles. Polish Contribution to the 30th CIRET Conference", Prace i Materiały IRG SGH, 86, 2011.

Piotr Białowolski, Katarzyna Rosiak-Lada, Piotr Zwiernik, Dawid Żochowski, *Joint modelling of the GDP, unemployment rate and inflation using composite indicators* (in Polish), Prace i Materiały IRG SGH, 80, 2007.

Piotr Zwiernik, *On graphical models for time series* (in Polish), Research Report, Instytut Ekonometrii, Warsaw School of Economics, 2006.

Piotr Białowolski, Piotr Zwiernik, Dawid Żochowski, *Diagnosing and Predicting Inflation in Poland with Application of Markov Switching Models and Future Inflation Indicator*, 26th CIRET Conference, Rome 2006.

Katarzyna Maciejowska, Piotr Zwiernik, *Nonlinear modelling for business cycle indicators* (in Polish), Prace i Materiały IRG SGH, 77, 2006.

Katarzyna Maciejowska, Piotr Zwiernik, *Switching Markov models in the analysis of business cycles using business cycle indicators* (in Polish), Zeszyty koniunktury w gospodarce polskiej, 21, 2005.

Piotr Zwiernik, *On a certain transformation for the business cycle survey data* (in Polish), Research Report, Instytut Ekonometrii, Warsaw School of Economics, 2004.

Activities

Supervision of PhD students

Arian Hashemzade (co-advised with Elena Tuzhilina)

Paul Rognon (co-advised with David Rossell)

Ichiro Hashimoto (co-advised with Stanislav Volgushev)

Supervision of Master students

2022 Alex Valencia, MSc Statistics, University of Toronto

first position: PhD studies, University of Toronto

2020 Karim Carroum (co-advised with Alberto Santini), MRes Economics, Universitat Pompeu Fabra

first position: Data Scientist, AILY LABS GmbH

2018 Joan Gasull Jolis (co-advised with David Rossell), MSc Data Science, Barcelona School of Economics

first position: Data Science Instructor, Freelance & Trainer at Netmind

2017 José Moreno Gutiérrez (co-advised with David Rossell), MSc Data Science, Barcelona School of Economics

first position: Big Data Analyst, Bluecap Management Consulting

Supervision of undergraduate students

2023 Jierui Zhu, Nathan Henry

2022 Luis Sierra Muntané, Linxia Li, Zhehan Ni, Nghia Le, Mo Wang, Weilun Chen

2021 Zhekai Pang, Yuhong Zhang

2017 Èrik Avilés Castilla, Pau Gimeno Perramon

2016 Alejandro-Matías Gonzalez Ferraro

Lecture courses given

Graphical models and convexity (Jul 2022), Summer School on Computation and Modelling, Wrocław University of Science and Technology, Wrocław, Poland. (6 hours)

Total positivity and graphical models (Dec 2019), XLV Conference "Statystyka Matematyczna" (Dec 2-6, 2019), Będlewo, Poland.

Latent tree graphical models (May 2018), 38th Finnish Summer School on Probability and Statistics, Lammi, Finland.

Latent tree graphical models (July 2017), Research program on Algebraic and Combinatorial Phylogenetics, Universitat Pompeu Fabra, Barcelona, Spain. (10 hours)

Semialgebraic statistics and latent tree graphical models (June 2016), Summer school on Algebra, Combinatorics and Statistics, Aalto University, Finland. (3 hours)

Latent tree graphical models (June 2015), Algebraic Statistics conference, University of Genoa, Italy. (3 hours)

Latent tree graphical models (April 2015), Big Data Program, Fields Institute, Toronto, Canada. (5 hours)

Nonlinear time series modeling (February 2007), National Bank of Poland, Warsaw, Poland. (2 days)

Invited conference presentations

CMStatistics (Dec 2023), Berlin, Germany.

Algebraic Statistics for Ecological and Biological Systems (Oct 9-13, 2023), IMSI, Chicago, USA.

Spanish+Polish Mathematical Meeting (Sep 2023), Łódź, Poland. [plenary talk]

Joint Statistical Meetings (Aug 2023), Toronto, Canada.

SIAM Conference on Applied Algebraic Geometry (Jul 2023), Eindhoven, the Netherlands.

BIRS-CMO Workshop "Computations and Data in Algebraic Statistics" (May 2023), Casa Matemática Oaxaca, Mexico.

Algebraic Structures in Statistical Methodology (Dec 2022), MFO, Oberwolfach, Germany.

Mathematical optimization and statistical theories using geometric methods (Oct 2022), Osaka, Japan.

International Conference in Probability and Statistics in Celebration of the 80th Birthday of Gérard Letac and in Commemoration of Hélène Massam (Apr 2022), Fields Institute, Toronto, Canada.

SIAM Conference on Applied Algebraic Geometry (Aug 2021), Texas A&M University, USA.

CMStatistics 2019 (Dec 2019), London, UK.

XLV Conference "Statystyka Matematyczna" (Dec 2019), Będlewo, Poland.

Graphical Models: Conditional Independence and Algebraic Structures (Oct 2019), Munich, Germany.

Workshop in Memory of František Matúš (Aug 2019), Prague, Czech Republic.

ICIAM (Jul 2019), Valencia, Spain.

SIAM Conference on Applied Algebraic Geometry (Jul 2019), Bern, Switzerland.

Machine Learning for Economics (Jun 2019), BGSE Summer Forum, Barcelona, Spain

Applied Algebra & Geometry Meeting (May 2019), Glasgow, Scotland.

Optimality in Algebraic Statistics (Feb 2019), Dortmund, Germany.

Advances in applied algebraic geometry (Dec 2018), Bristol, UK.

COSTNET18 conference (Sep 2018), Warsaw, Poland. [plenary talk]

Joint Statistical Meetings (Jul 2018), Vancouver, Canada.

Data Science, Statistics & Visualisation (Jul 2018), Vienna, Austria.

IMS Annual Meeting (Jul 2018), Vilnius, Lithuania.

Statistics in Complex Systems (Apr 2018), Copenhagen, Denmark.

CMStatistics 2017 (Dec 2017), London, UK.

Algebraic Statistics Workshop (Nov 2017), Montpellier, France

Congreso de Jóvenes Investigadores (Sept 2017), Universitat de València, Spain.

European Meeting of Statisticians 2017 (Jul 2017), University of Helsinki, Finland.

Barcelona Mathematical Days (Apr 2017), Barcelona, Spain.

Workshop on Algebraic Statistics (Apr 2017), MFO, Oberwolfach, Germany.

1st BGSMath Data Science Workshop (Feb 2017), Barcelona, Spain.

CMStatistics 2016 (Dec 2016), University of Seville, Spain.

Conference on Conditional Independence Structures and Extremes (Oct 2016), TU Munich, Germany.

Joint Statistical Meetings 2016 (Aug 2016), Chicago, USA.

Applications of Algebraic Methods to Statistics (Jun 2016), RIMS, Kyoto, Japan.

CMStatistics 2015 (Dec 2015), London, UK.

Second Heidelberg-Mannheim Stochastics Colloquium (Nov 2015), Heidelberg, Germany.

SIAM Conference on Applied Algebraic Geometry (Aug 2015), NIMS Daejeon, South Korea.

CMStatistics 2014 (Dec 2014), University of Pisa, Pisa, Italy.

Algebraic Statistics at the AMS Fall Western Sectional Meeting (Oct 2014), San Francisco, USA.

Workshop on Algebraic Statistics (Aug 2014), Prague, Czech Republic.

COMPSTAT 2014 (Aug 2014), Geneva, Switzerland.

Joint Statistical Meetings 2014 (Aug 2014), Boston, USA.

Fourth Encuentro Colombiano de Combinatoria (June 2014), Universidad de los Andes, Bogotá, Colombia.

Algebraic Statistics Conference (May 2014), the Illinois Institute of Technology, Chicago, USA.

Applied Algebra Days 2 (May 2014), Wisconsin Institutes for Discovery, The University of Wisconsin, Madison, USA.

Joint Statistical Meetings 2013 (August 2013), Montréal, Canada.

SIAM Conference on Applied Algebraic Geometry 2013 (August 2013), Colorado State University, USA.

Algebraic Statistics in Europe (September 2012) at IST Austria, Vienna, Austria.

Workshop on Algebraic Statistics (June 2012) at The Pennsylvania State University, PA, US.

DIAMANT symposium (May 2012) at Hotel Veldenbos in Nunspeet, Holland.

Working group on algebra and combinatorics (May 2012) at CWI Amsterdam, Holland.

Workshop on Graphical Models: Mathematics, Statistics and Computer Science (April 2012) at at the Fields Institute, Toronto.

AIM Workshop on Singular learning theory: connecting algebraic geometry and model selection in statistics (December 2011) at the American Institute of Mathematics (AIM) in Palo Alto, California.

MEGA 2011: Effective Methods in Algebraic Geometry (May 2011), Stockholm, Sweden.

WOGAS3: Workshop on Geometric and Algebraic Statistics 3 (April 2011) at University of Warwick, UK.

SIMAI 2010 (June 2010) at Universitá di Cagliari, Sardinia, Italy.

Higher Dimensional Birational Geometry. (June 2010) Warwick University.

9th Valencia International Meeting on Bayesian Statistics 2010 (June 2010) Benidorm, Alicante, Spain. (poster).

Model Uncertainty (June 2010) Warwick University. (poster).

Research Students' Conference 2010 (April 2010) at University of Warwick.

The Workshop on Geometric and Algebraic Statistics 2 (April 2010) at the University Warwick.

The Workshop on Graphical Models and Genetic Applications. (April 2009) at Warwick (poster).

RSC 2009. (March 2009) in Lancaster.

The Workshop on Algebraic Statistics. (Dec 2008) at MSRI, Berkeley, CA, USA.

The Opening Workshop for 2008-09 Program on Algebraic Methods in Systems Biology and Statistics. (September 2008) at SAMSI, NC, USA (poster).

Workshop on Applied Mathematics/Statistics Interface, Warwick (June 2008) (poster).

WAG Workshop on Commutative Algebra, Complexes and Computer Algebra, Warwick (June 2008).

Seminar talks

CS Theory Seminar (Oct 2023), University of Toronto, Canada.

Harvard Applied Mathematics Seminar (Oct 2023), Harvard University, Allston, USA.

Colloquium of the Department of Mathematics and Statistics (Sep 2022), Queen's University, Kingston, Canada.

Statistics Seminar (May 2022), UCLA, Los Angeles, CA.

SPOR Seminar (Jan 2021), TU Eindhoven, Netherlands.

Statistics Seminar (Jan 2021), University of Toronto, Canada.

Statistics Seminar (Jan 2021), University of Washington, Seattle, USA.

Probability Seminar (Nov 2020), Warsaw Technical University, Poland.

Statistics Seminar (Nov 2020), GSEM, University of Geneva.

Statistics Seminar (Jan 2020), London School of Economics, UK

Algebraic Geometry Seminar (May 2017), Universitat de Barcelona, Barcelona, Spain

Combinatorics Seminar (May 2017), Universitat Politècnica de Catalunya, Barcelona, Spain.

Statistics Seminar (Mar 2016), Universitat Pompeu Fabra, Barcelona, Spain.

Algebraic Statistics Seminar (Oct 2015), University of Genoa, Italy.

Dipartimento di Matematica e Informatica U. Dini (Sep 2015), Università di Firenze, Italy.

Dipartimento di Economia, Finanza e Statistica (Jul 2015), Università di Perugia, Italy.

Machine Learning Lunch Seminar (May 2015), University of Genoa, Italy.

Statistics Seminar (Mar 2015) Collegio Carlo Alberto, Moncalieri, Italy.

Seminar in Applied Mathematics and Statistics (Mar 2015) University of Copenhagen, Denmark.

Algebraic Geometry Seminar (Mar 2015) Genoa, Italy.

Department of Mathematics and Statistics (Feb 2015) Lancaster University, UK.

Algebraic Statistics Meetings (Feb 2015) University of Genoa, Italy.

Department of Economics and Business (Feb 2015) Universitat Pompeu Fabra, Barcelona, Spain.

Statistics Colloquium (Jan 2015), University of Chicago, IL, USA.

Mathematics Colloquium (Nov 2014), San Francisco State University, CA, USA.

Maseeh Mathematics and Statistics Colloquium (Nov 2014), Portland State University, Oregon, USA.

Computational Algebraic Geometry Seminar (Nov 2014), UC Berkeley, USA.

Faculty of Mathematics, Informatics and Mechanics (Aug 2014), Warsaw University, Poland.

Algebraic Statistics Seminar (April 2014), UC Berkeley, USA.

AGC Seminar (May 2013), San Francisco State University, USA.

SGSA Student Seminar (April 2013), UC Berkeley, USA.

BAD Math Day Seminar (April 2013), San Jose State University, USA.

Representation Theory, Geometry, Combinatorics Seminar (Feb 2013), UC Berkeley, USA.

CRiSM Seminar (Nov 2012) at the University of Warwick, UK.

Intercity Number Theory Seminar (Nov 2012), TU Eindhoven, Eindhoven, Holland.

Eindhoven Stochastics Seminar (May 2012) at Eurandom, Eindhoven, Holland.

Berkeley Algebraic Statistics Seminar (Nov 2011) at UC Berkeley, CA, USA.

IPAM Seminar (Nov 2011) at IPAM, UCLA, CA, USA.

Eindhoven Seminar Combinatorial Theory (May 2011) at TU Eindhoven, Eindhoven, Holland.

Combinatorics Seminar (May 2011) at KTH, Stockholm, Sweden.

ESI seminar (Mar 2011) at the Erwin Schrödinger International Institute for Mathematical Physics, Vienna, Austria.

Institut Mittag-Leffler Seminar (Feb 2011) at Institut Mittag-Leffler, Stockholm, Sweden.

Statistics Seminar, Queen Mary, London (Nov 2010).

YRM at Warwick (Nov 2010).

YRM at Warwick (May 2009).

Seminarium MCMC. (Oct 2008) at MIM, Warsaw University, Warsaw.

YRM at Warwick (May 2008).

Popular science talks

BGSMath European Researchers' Night Event (Sep 29), Barcelona, Spain.

Collaborative visits

Peter McCullagh, (Mar 2016), University of Oxford, UK.

Giovanni Marchetti and Nanny Wermuth (Dec 2015), Università di Firenze, Italy.

Elvira Di Nardo (October 2015), Università della Basilicata, Potenza, Italy.

Giovanni Marchetti and Giorgio Ottaviani (September 2015), Università di Firenze, Italy.

Caroline Uhler (August 2015), IST Austria, Vienna, Austria.

Antonio Forcina (July 2015), Università di Perugia, Italy.

Elvira Di Nardo (June 2015), Università della Basilicata, Potenza, Italy.

Marta Casanellas Rius and Jesus Fernández-Sánchez (May 2015), Barcelona Tech, Barcelona, Spain.

Steffen Lauritzen (March 2015), University of Copenhagen, Denmark.

Mathias Drton (March 2014), University of Washington, Seattle, USA.

Mathias Drton (April 2013), University of Washington, Seattle, USA.

Franz Lehner (April 2011), Erwin Schrödinger International Institute for Mathematical Physics, Vienna, Austria.

Professional Memberships

Bernoulli Society, IMS.

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