

Curriculum vitae

PERSONAL INFORMATION

Name: Kalliopi MYLONA.

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ACADEMIC ACHIEVEMENTS

- Ph.D. in Statistics, National Technical University of Athens, Greece, 02/07/2009.

Thesis: Combinatorial Constructions and Statistical Analysis of Factorial Designs
(Supervisor: Professor Christos Koukouvinos)

- M.S. in Applied Mathematical Sciences, National Technical University of Athens, Greece, 08/12/2005.

Degree: 9.36 (Excellent)

Master Thesis: Statistical Criteria for Evaluating Fractional Factorial Designs,
Saturated and Supersaturated Designs
(Supervisor: Professor Christos Koukouvinos)

- Diploma in Applied Mathematical and Physical Sciences, National Technical University of Athens, Greece, 15/11/2004.

Degree: 9.00 (Excellent)

Diplomatic Thesis: Classification Criteria and Statistical Analysis of Fractional Factorial Designs
(Supervisor: Professor Christos Koukouvinos)

SCHOLARSHIPS-GRANTS

UC3M CONEX fellowship, (2015-2018)

EPSRC First Grant - Revised 2009, (2015-2016)

MCAA Micro Travel Grant, (2015 and 2017)

Marie Curie Intra-European Fellowship for Career Development, (2010-2012).

Greek State Scholarships Foundation, (2006-2009).

Greek State Scholarships Foundation, (2005).

Technical Chamber of Greece, (2000 and 2004).

Greek State Scholarships Foundation,(2000).

REFEREE

Biometrical Journal

BMJ Open

Colombian Journal of Statistics

Communications in Statistics - Simulation and Computation

Communications in Statistics - Theory and Methods

Computational Statistics and Data Analysis

Computer Methods and Programs in Biomedicine

Computers and Electronics in Agriculture

International Statistical Review

Journal of Applied Probability and Statistics

Journal of Applied Statistics

Journal of Clinical Epidemiology
Journal of the Royal Statistical Society Series C (Applied Statistics)
Journal of Statistical Planning and Inference
Journal of Statistical Theory and Practice
Journal of Statistics: Advances in Theory and Applications
Journal of Statistics Applications and Probability
Hacetatepe Journal of Mathematics and Statistics
MethodsX
Metron - International Journal of Statistics
Quality and Reliability Engineering International
Psychometrika
SpringerPlus
Statistica Neerlandica
Statistical Methodology
Statistics and Computing
Technometrics

EDITORIAL ACTIVITIES

Guest Editor for Special Issue of International Journal of Applied Mathematics & Statistics, (2011), 24,
Special Issue on Statistical Methods in Biostatistics and Reliability,
Guest Editors: C. Koukouvinos, F. Vonta, K. Mylona

UNIVERSITY TEACHING EXPERIENCE

- 2016-...: Lecturer in Statistics, Department of Mathematics, King's College London, UK.
2015-2018: Visiting Lecturer, Department of Statistics, University Carlos III, Madrid.
2011-2016: Lecturer in Statistics, Faculty of Social and Human Sciences, University of Southampton, UK.
2010-2012: Postdoc researcher, Faculty of Applied Economics, University of Antwerp, Belgium.
2009: Lectures in the undergraduate courses Special issues of Statistics - Queueing theory
Department of Informatics, University of Piraeus,
Piraeus, Greece
2009: Lectures in the undergraduate courses Regression Analysis - Linear Algebra
Department of Statistics, Athens University of Economic and Business,
Athens, Greece
2009: Lectures in the postgraduate course Statistical Linear Models
Faculty of Applied Mathematics and Statistics, National Technical
University of Athens, Athens, Greece
2005-2009: Lab assistant in the undergraduate course Regression
Analysis (application of the statistical software Minitab)
Faculty of Applied Mathematical and Physical Sciences, National Technical
University of Athens, Greece
2006-2009: Lab assistant in the in the undergraduate course Linear Models and Designs (application
of the statistical software Statgraphics)
Faculty of Applied Mathematical and Physical Sciences, National Technical
University of Athens, Greece
2006-2009: Lab assistant in the postgraduate course Statistical Designs (application of
the statistical software Statgraphics)
Faculty of Applied Mathematical and Physical Sciences, National Technical
University of Athens, Greece
2006-2009: Lab assistant in the postgraduate course Quality Control (application of the
statistical software Statgraphics)
Faculty of Applied Mathematical and Physical Sciences, National Technical
University of Athens, Greece

SHORT COURSES

- 2015: Erasmus summer school, Department of Statistics, Ege University, Turkey on *Statistical Methods for Meta-Analysis* (joint with Professor Dankmar Bohning and Mr James Gallagher)
- 2013: Erasmus winter school, LSM, ENSAI (RENNES), France on *Meta-Analysis of Rare Event Data* (joint with Professor Dankmar Bohning)

OTHER EXPERIENCE

- 2003: IAESTE (The International Association for the Exchange of Students for Technical Experience); UiB, Institute of Solid Earth Physics, Department of Mathematics and Physics, University of Bergen, Norway.
- 2003: Training supporter; GoOnline, EOMMEX, Greek Ministry of Development, Athens, Greece.
- 2002: On-the-job training; Ministry of Economy and Finance, Athens, Greece.

Supervision

Postgraduate Researchers

- E. Matthews: *Supersaturated Multi-Stratum Designs: Construction and Statistical Modelling* (co-supervisor Prof. D.C. Woods), 2016.

PhD Students

- Y. Huang: *Optimal Design of Experiments with Multifactorial Nonlinear Models* (co-supervisor Prof. S. Gilmour), 2016.
- S.M. Aljeddani: *Statistical Analysis of Split-Plot Designs via Shrinkage Methods* (co-supervisor Prof. D.C. Woods), in progress.

MSc Students

- A.M. Mohamad *Equivalent-Estimation Split-Plot Designs and Split-Split-Plot Designs*, 2014.
- P. J. Rook: *The Analysis Of Recurrent Event Data* (NHS Blood and Transplant project), 2014.
- D. Erakli: *Supplementation of a Clinical Trial by Historical Control Data: An Exploration of Possible Consequences* (GSK project), 2013.
- M. Stevens: *Response Surface Methodology and Restricted Randomisation*, 2013.
- V. Kiroplastis: *Meta-Analysis of Rare Events* (GSK project), 2012.
- A. Charalabidis: *Factorial Designs, Correlated Responses and non Linear Models in Time Series Analysis*, 2010.
- M. Maraziotis: *Assessment of Industrial and Medical Measurement Systems using Statistical Models*, 2010.
- G. Xynos: *Use of Analysis of Variance for Control and Reliability of Measurement Systems*, 2010.

Undergraduate Students

- M. Khanna: *Linear Methods for Regression*, 2013.
- C. Leung: *Optimising Property Valuation Models: Using Subset Selection and Shrinkage Methods*, 2013

SOCIETY MEMBERSHIPS

ENBIS, European Network for Business and Industrial Statistics
Spanish Society of Statistics and Operations Research

SKILLS

Languages: English (Michigan Proficiency), Spanish (Nivel Avanzado),
Italian (CILS2, University of Siena), Dutch (Level 1),
Greek (mother tongue).

Computing: Matlab, Mathematica, Maple, Minitab, R, SAS/JMP, Statgraphics, SPSS, WinBUGS.

RESEARCH INTERESTS

Combinatorial Designs, Difference Sets, Statistical and Experimental Designs, Optimal Designs, Linear Models, Generalized Linear Models, Regression Analysis, Analysis of Variance, Biostatistics, Survival analysis, Meta-analysis, Statistical Quality Control, Data Analysis, Variable Selection Methods, Evolutionary Algorithms and Metaheuristics, Data Mining.

RESEARCH RESULTS

PUBLICATIONS

PhD Thesis

K. Mylona, Combinatorial Constructions and Statistical Analysis of Factorial Designs, Ph.D. Thesis, *Faculty of Applied Mathematical and Physical Sciences, National Technical University of Athens*, 2009 (in Greek).

Papers in Refereed Journals

1. H. Evangelaras, C. Koukouvinos and K. Mylona, Projection properties of Hadamard matrices of order 36 obtained from Paley's constructions, *Metrika*, 64 (2006), 351-359.
2. H. Evangelaras, C. Koukouvinos and K. Mylona, On Hadamard embeddability, *Journal of Discrete Mathematical Sciences and Cryptography*, 9 (2006), 503-512.
3. C. Koukouvinos, K. Mylona and D. Simos, Exploring k-circulant supersaturated designs via genetic algorithms, *Computational Statistics and Data Analysis*, 51 (2007), 2958-2968.
4. C. Koukouvinos, K. Mylona and D. Simos, k-Circulant supersaturated designs and metaheuristics: A comparative study on construction methods of supersaturated designs, *Journal of Applied Probability and Statistics*, 2 (2007), 37-47.
5. C. Koukouvinos, P. Mantas and K. Mylona, A general construction of $E(f_{NOD})$ -optimal mixed-level supersaturated designs, *Sankhya*, 69 (2007), 358-372.
6. C. Koukouvinos and K. Mylona, A method for analyzing supersaturated designs with a block orthogonal structure, *Communications in Statistics-Simulation and Computation*, 37 (2008), 290-300.
7. C. Koukouvinos, K. Mylona and D. Simos, $E(s^2)$ -optimal and minimax-optimal cyclic supersaturated designs via multi-objective simulated annealing, *Journal of Statistical Planning and Inference*, 138 (2008), 1639-1646.
8. C. Koukouvinos, P. Mantas and K. Mylona, A general construction of $E(s^2)$ -optimal large supersaturated designs, *Metrika*, 68 (2008), 99-110.
9. C. Koukouvinos, K. Mylona and F. Vonta, A comparative study of variable selection procedures applied in high dimensional medical problems, *Journal of Applied Probability and Statistics*, 3 (2008), 195-209.
10. C. Koukouvinos, E. Lygkoni and K. Mylona, Split-plot designs: A useful tool for the statistical analysis of real medical data and repeated measurement problems, *Bulletin of Statistics and Economics*, 3(1), (2009), 61-66.
11. K. Mylona, C. Koukouvinos, E.-M. Theodoraki and S. Katsaragakis, Variable selection via nonconcave penalized likelihood in high dimensional medical problems, *International Journal of Applied Mathematics & Statistics*, 14 (2009), 1-11.
12. C. Koukouvinos, K. Mylona and D. Simos, A hybrid SAGA algorithm for the construction of $E(s^2)$ -optimal cyclic supersaturated designs, *Journal of Statistical Planning and Inference*, 139 (2009), 478-485.
13. S. Katsaragakis, E.-M. Theodoraki, C. Koukouvinos, E. Lygkoni and K. Mylona, A comparative study of several scoring systems of a disease via the longitudinal data analysis, *Journal of Statistics and Management Systems*, 12 (2009), 141-154.

14. C. Koukouvinos, E. Lygkoni, K. Mylona and A. Skountzou, Control charts in biomedical data, *Bulletin of Statistics and Economics*, 3(2), (2009), 50-61.
15. C. Koukouvinos and K. Mylona, Group screening method for the statistical analysis of $E(f_{NOD})$ -optimal mixed-level supersaturated designs, *Statistical Methodology*, 6, (2009), 380-388.
16. C. Koukouvinos and K. Mylona, A general construction of $E(s^2)$ -optimal supersaturated designs via supplementary difference sets, *Metrika*, 70 (2009), 257-265.
17. C. Koukouvinos, K. Mylona and A. Skountzou, A permutation test for effects in unreplicated factorial designs based on inequivalent Hadamard matrices, *Journal of Statistical Theory and Applications*, 8 (2009), 283-298.
18. C. Koukouvinos, K. Mylona, D. Simos and A. Skountzou, An algorithmic construction of four-level response surface designs, *Communications in Statistics-Simulation and Computation*, 38 (2009), 2152-2160.
19. A. Karagrighoriou, C. Koukouvinos and K. Mylona, On the advantages of the nonconcave penalized likelihood model selection method with minimum prediction errors in large scale medical studies, *Journal of Applied Statistics*, 37 (2010), 13-24.
20. C. Koukouvinos, K. Mylona and E. Massou, A Study on the Application of Data Mining Techniques for Classification and Clustering of Medical Data, *Journal of Applied Probability and Statistics*, 5 (2010), 1-14.
21. E. Androulakis, C. Koukouvinos, K. Mylona and F. Vonta, A real survival analysis application via variable selection methods for Cox's proportional hazards model, *Journal of Applied Statistics*, 37 (2010), 1399-1406.
22. K. Chatterjee, C. Koukouvinos and K. Mylona, A new lower bound to A_2 -optimality measure for multi-level and mixed-level column balanced designs and its applications, *Journal of Statistical Planning and Inference*, 141 (2011), 877-888.
23. C. Koukouvinos, E. Massou, K. Mylona and C. Parpoula, Analyzing supersaturated designs with entropic measures, *Journal of Statistical Planning and Inference*, 141 (2011), 1307-1312.
24. C. Koukouvinos, K. Mylona and A. Skountzou, A variable selection method for analyzing supersaturated designs, *Communications in Statistics-Simulation and Computation*, 40 (2011), 484-496.
25. E. Androulakis, C. Koukouvinos and K. Mylona, Tuning parameter estimation in penalized least squares methodology, *Communications in Statistics-Simulation and Computation*, 40 (2011), 1444-1457.
26. C. Koukouvinos, K. Mylona and D. Simos, An algorithmic construction of $E(s^2)$ -optimal supersaturated designs, *Journal of Statistical Theory and Practice*, 5 (2011), 357-367.
27. C. Koukouvinos, K. Mylona, A. Skountzou and P. Goos, A general construction method for five-level second-order rotatable designs, *Communications in Statistics - Simulation and Computation*, 42 (2013), 1961-1969.
28. C. Koukouvinos, K. Mylona, and C. Parpoula, A combination of variable selection and data mining techniques for high-dimensional statistical modelling, *International Journal of Information and Decision Sciences*, 5 (2013), 154-168.
29. K. Mylona, H. Macharia, and P. Goos, Three-level equivalent-estimation split-plot designs based on subset and supplementary difference set designs, *IIE Transactions*, 45 (2013), 1153-1165.

30. C. Parpoula, K. Drosou, C. Koukouvinos and K. Mylona, A new variable selection approach inspired by supersaturated designs given a large-dimensional dataset, *Journal of Data Science*, 12 (2014), 35-52.
31. F. Sambo, M. Borrotti, and K. Mylona, A coordinate-exchange two-phase local search algorithm for the D- and I-optimal design of split-plot experiments, *Computational Statistics and Data Analysis*, 72 (2014), 1193-1207.
32. K. Mylona, P. Goos, and B. Jones, Optimal design of blocked and split-plot experiments for fixed effects and variance component estimation, *Technometrics*, 56 (2014), 132-144.
33. V. Capraro, C. Smyth, K. Mylona and G.A. Niblo, Benevolent characteristics promote cooperative behaviour among humans, *PLoS ONE*, 9 (2014), 1-6.
34. D. Böhning, K. Mylona, and A. Kimber, Meta-analysis of clinical trials with rare events, *Biometrical Journal*, 57 (2015), 633-648.
35. M. Borrotti, F. Sambo, K. Mylona and S. Gilmour, A multi-objective coordinate-exchange two-phase local search algorithm for multi-stratum experiments, *Statistics and Computing*, 27 (2017), 469-481.
36. P. Goos and K. Mylona, Quadrature Methods for Bayesian Optimal Design of Experiments with Non-Normal Prior Distributions, *Journal of Computational and Graphical Statistics*, 27 (2018), 179-194.

CONFERENCES-INVITED SEMINARS

1. The 19th National Statistical Conference, *Kastoria, Greece* - April 2006.
Contributed Talk Title: Circulant Supersaturated Designs via Genetic Algorithms.
2. The 12th International Conference on Applied Stochastic Models and Data Analysis (ASMDA 2007), *Chania, Greece* - May 2007.
Contributed Talk Title: A Comparative Study on Construction Methods of Supersaturated Designs and their Statistical Analysis.
3. The 28th Annual Conference of the International Society for Clinical Biostatistics (ISCB28 2007), *Alexandroupoli, Greece* - July 2007.
Poster Title: A Comparative Study Of Variable Selection Procedures Applied to Real Medical Data.
4. The 21st National Statistical Conference, *Samos, Greece* - April 2008.
Contributed Talk Title: Variable Selection Methods For High Dimensional Medical Problems.
5. The 8th Conference of the European Network for Business and Industrial Statistics (ENBIS8), *Athens, Greece* - September 2008.
Contributed Talk Title: Construction and Statistical Analysis of Supersaturated Designs: A New Approach.
6. The 22nd National Statistical Conference, *Chania, Greece* - April 2009.
Contributed Talk Title: Data Mining Algorithms and Variable Selection Methods applied to High-Dimensional Medical Problems.
7. 9th Workshop on Quality Improvement Methods at the Universitätskolleg Bommerholz, *Dortmund, Germany* - May 2010.
Contributed Talk Title: A General Construction Method for Mixed-Level Supersaturated Designs.
8. 2010 Joint Statistical Meetings, *Vancouver, Canada* - August 2010.
9. 28th European Meeting of Statisticians (EMS2010), *Athens, Greece* - August 2010.
Contributed Talk Title: A Group Screening Method for the Statistical Analysis of Data from Mixed-Level Supersaturated Designs.
10. 18th Meeting of the Belgian Statistical Society (BSS2010), *Spa, Belgium* - October 2010.
Contributed Talk Title: Penalized Least Squares for Models with Correlated Responses.
11. CFE-ERCIM 2010, *London, UK* - December 2010.
Contributed Talk Title: The Statistical Analysis of Optimal Mixed-Level Supersaturated Designs Using Group Screening.

12. ENBIS-DEINDE 2011 Spring Conference, *Turin, Italy* - March 2011.
Contributed Talk Title: A New Approach to the Optimal Design of Blocked and Split-Plot Experiments.
13. ICODOE 2011, *Memphis, USA* - May 2011.
Invited Talk Title: Optimal Design of Blocked and Split-Plot Experiments For Fixed-Effects and Variance-Component Estimation.
14. SRC 2011, *Chicago, USA* - June 2011.
Invited Talk Title: Bayesian Optimal Design of Blocked and Split-Plot Experiments.
15. DEMA 2011, *Cambridge, UK* - August 2011.
Contributed Talk Title: New Classes of Second-Order Equivalent-Estimation Split-Plot Designs.
16. DAE 2011, *Cambridge, UK* - October 2011.
Invitation to participate in Design and Analysis of Experiments program, Isaac Newton Institute for Mathematical Sciences.
17. CFE-ERCIM 2012, *Oviedo, Spain* - December 2012.
Invited Talk Title: Quadrature methods for optimal design of blocked and split-plot experiments.
18. QPRC 2013, *Niskayuna, NY, USA* - June 2013.
Invited Talk Title: Optimal Split-Plot Designs Allowing for Pure-Error Estimation of the Variance Components.
19. mODa10 2013, *Lubuski, Poland* - June 2013.
Invited Talk Title: Bayesian Optimal Design of Blocked and Split-Plot Experiments for Fixed Effects and Variance Component Estimation.
20. CFE-ERCIM 2013, *London, UK* - December 2013.
Organisation of "Design of Experiment in Industry" Session.
21. Seminar at Department of Statistics, *UC3M, Spain* - October 2014.
Invited Talk Title: Designing blocked and split-plot experiments: A Bayesian Approach.
22. MCAA General Assembly, *Porto, Portugal* - February 2015.
Poster Title: Design of Experiments: Exact D-optimal Designs for Multi-factor Nonlinear Models.
23. Stu Hunter 2015 conference, *Leuven, Belgium* - March 2015.
24. ISI 2015, *Rio de Janeiro, Brazil* - August 2015.
Contributed Talk Title: Supersaturated Split-Plot Designs.
25. Seminar at Industrial Engineering School, *UCLM, Spain* - November 2015.
Invited Talk Title: Supersaturated Designs with Restricted Randomisation: An Application to a Tribology Experiment.
26. DEMA 2015, *Sydney, Australia* - December 2015.
Invited Talk Title: Supersaturated Split-Plot Designs: Construction and Statistical Modelling.
27. mODa11, *Hamminkeln-Dingden, Germany* - June 2016.
Invited Talk Title: Supersaturated Multi-Stratum Designs: Construction and Modelling.
28. ICISE2016, *Palermo, Italy* - June 2016.
Invited Talk Title: Applying supersaturated designs under restricted randomization to a tribocorrosion experiment.
29. SEIO2016, *Toledo, Spain* - September 2016.
Invited Talk Title: A multi-objective optimisation algorithm for the design of multi-stratum experiments.
30. ERCIM2016, *Seville, Spain* - December 2016.
Organisation of "Design of Experiments" Session.
Invited Talk Title: Optimal restricted-randomised response designs allowing for pure-error estimation of the variance components.
31. MCAA General Assembly, *Salamanca, Spain* - March 2017.
Poster Title: Statistical analysis of split-plot experiments via shrinkage methods.
32. Seminar at School of Mathematical Sciences, University of Southampton, UK - April 2017.
Invited Talk Title: Optimal restricted-randomised experiments that allow for pure-error estimation of the variance components.

33. RBRAS/SEAGRO, *Lavras, Brazil* - July 2017.

Invited Talk Title: Applying supersaturated split-plot designs to a tribocorrosion experiment.

34. Seminar at Department of Biostatistics, UNESP Botucatu, Brazil - August 2017.

Invited Talk Title: Supersaturated split-plot designs and industrial applications.