

CURRICULUM VITÆ

Carlos Manuel Agra Coelho

July / 2018

Index

1. Personal Data	1
2. Academic Degrees	1
3. Academic Situation and Academic Background	2
3.1. Participation in the foundation of Master and Ph.D. Programs ..	2
3.2. Institutional and Managerial positions	3
4. Grants and Prizes	4
5. Teaching Activities and Student Supervision	5
5.1. Details about the Teaching Activity	6
5.2. Supervision of Post-Doc Grants	13
5.3. Supervision of Ph.D. and Master Theses	13
5.4. Participation in Doctoral and Master Evaluation Committees ..	16
6. Research Activities	20
7. Seminars and Invited Lectures	24
8. Publications	30
8.1. Books	30
8.2. Papers in International Journals with referee	30
8.3. Book Chapters and Papers Published in Books, with referee	36
8.4. Theses, Academic Essays and works related with Academic Degrees	38
8.5. Didactical Texts and Books in preparation	39
8.6. Works related with Applications for Academic Positions	40
8.7. Other publications	41
8.8. Preprints	43
8.9. Participation in Conferences – Oral presentations (Abstracts) ..	48
9. Participation in Research Projects	54
10. Editorial, revision and other activities	56
10.1. Participation in the Editorial Board of Scientific Journals	56
10.2. Activities as Guest Editor of special issues of Scientific Journals	57
10.3. Activities as Referee and Reviewer	57
10.4. Activities as member of Organizing and Scientific Committees	58
10.5. Other activities	60

CURRICULUM VITÆ

Carlos Manuel Agra Coelho

1. Personal Data

Born: November 22, 1958,
at Barreiro, District of Setúbal, Portugal.

Nationality: Portuguese.

Address:

Professional: Faculdade de Ciências e Tecnologia - Universidade Nova
de Lisboa
Departamento de Matemática
Quinta da Torre
2829-516 Caparica – Portugal
Phone: (351) 21 294 8388
Fax: (351) 21 294 8391
e-mail: cmac@fct.unl.pt
web-page: <https://www.sites.google.com/site/carloscoelho111/>



ResearcherID: A-3078-2010 / **ORCID:** 0000-0002-5628-0625

2. Academic Degrees

- Habilitation in Mathematics by the University of Lisbon (then Lisbon University of Technology – Mathematics Department of Instituto Superior de Agronomia), approved by unanimity, on October 3, 2000;
- Ph.D. in Biostatistics by the University of Michigan, Ann Arbor, Michigan, U.S.A., in May 1992; with equivalence to the degree of 'Doutor em Estatística e Computação/Probabilidades e Estatística' by Faculdade de Ciências of Universidade de Lisboa in October 1992;
- Licenciatura in Forestry Engineering by Instituto Superior de Agronomia in April 1982.

3. Academic Situation and Academic Background

Carlos Manuel Agra Coelho is Full Professor at the Mathematics Department of Faculdade de Ciências e Tecnologia of Universidade Nova de Lisboa. He is also an Elected Member of the International Statistical Institute since 2013 – sponsors were Professors C. R. Rao from Penn State University, Feridun Turkman from the University of Lisbon and Evdokia Xekalaki from the University of Athens.

Before he was Associate Professor with Habilitation at the Mathematics Department of Faculdade de Ciências e Tecnologia of Universidade Nova de Lisboa and previously at Instituto Superior de Agronomia of the then Universidade Técnica de Lisboa.

Ph.D. in Biostatistics by the University of Michigan, Ann Arbor, Michigan, U.S.A., with a dissertation entitled 'Generalized Canonical Analysis', where it is shown how, using the Generalized Canonical Analysis as a basis, it is possible to develop a unified inferential approach to several linear models such as the Canonical Analysis, the Multivariate or Univariate Analysis of Variance, Regression, Discriminant Analysis, Simple or Multiple Correspondence Analysis and the Principal Components Analysis, by using statistics related with the Wilks Lambda statistic, he obtained equivalence to the degree of Doutor em Estatística e Computação/Probabilidades e Estatística by Faculdade de Ciências of Universidade de Lisboa in October 1992.

Languages: Portuguese, English and French (fluent in conversation, writing and reading), Spanish and Italian (reading).

Programming Languages, softwares and High-Level Programming

Languages used in research activities: FORTRAN, BASIC, APL, LISP; R, MATHEMATICA, MAXIMA.

3.1 – Participation in the foundation of Master and Ph.D. Programs

Carlos A. Coelho

- has actively participated, namely as vice-president of the Mathematics Department and Scientific Coordinator of the Research Unit in Applied Mathematics, in founding the Ph.D. Program in Mathematics at Instituto Superior de Agronomia (ISA/UTL);
- was a founding member of the Master Program in Applied Mathematics for the Biological Sciences at Instituto Superior de Agronomia (ISA/UTL), taking active part in the definition of the overall curricular

plan for the Master Program as well as the curricular plans for several particular courses;

- has actively participated in the definition of the curricular plan and the establishment of the Ph.D. Program in Statistics and Risk Management at Faculdade de Ciências e Tecnologia of Universidade Nova de Lisboa, taking also active part in defining the curricular contents of a few of the courses of the Program;
- has taken active part in defining the curricular contents of a number of courses which are part of the Master Program in Applied Mathematics, at Faculdade de Ciências e Tecnologia of Universidade Nova de Lisboa, namely the Multivariate Statistics course and other courses in the Statistics area.

3.2 – Institutional and Managerial positions

- Member of the Scientific Committee of the Ph.D. Program in Statistics and Risk Management at Faculdade de Ciências e Tecnologia of Universidade Nova de Lisboa;
- Member of the Scientific Committee of the Undergraduate Program in Mathematics at Faculdade de Ciências e Tecnologia of Universidade Nova de Lisboa;
- Member of the Board of the Fulbrighters Portugal (Portuguese Fulbright Alumni Association);
- Head researcher of the research sub-project in 'Distribution Theory' of CMA/UNL, the Research Center in Mathematics and Its Applications at Universidade Nova de Lisboa;
- Member of the Mathematics Department Counsel at Faculdade de Ciências e Tecnologia of Universidade Nova de Lisboa (2010-2014);
- Member of the Scientific Committee of the Master Program in Applied Mathematics at Faculdade de Ciências e Tecnologia of Universidade Nova de Lisboa (2010-2014);
- Scientific Coordinator of the Research Unit Applied Mathematics/IISA at ISA/UTL, from July 1999 through April 2003, during which period this Unit was graded as 'Very Good';
- Vice-president of the Mathematics Department at Instituto Superior de Agronomia (ISA/UTL), from June 1999 through June 2003;

- Member of the Scientific Committee of the Master Program in Applied Mathematics to the Biological Sciences at Instituto Superior de Agronomia (ISA/UTL), from September 1995 through September 2005;
- Member of The Scientific Board for Basic Sciences and the Scientific Board for the Undergraduate Course in Forestry Engineering at ISA/UTL, from May 2000 through April 2002;
- Member of the Installation Commission for the Computing Center at ISA/UTL, from 1984 through 1993.

4. Grants and Prizes

- While a Ph.D. student at the Biostatistics Department of University of Michigan, Ann Arbor, Carlos Agra Coelho received the Dow Chemical prize for the best Ph.D. student in 1991;
- Also while a Ph.D. student at the Biostatistics Department of the University of Michigan he has also received a 'Certificate of Achievement – in recognition of outstanding achievement in the area of Physical Sciences and Mathematics' for his participation at the 'IBM Supercomputing Competition 1989';
- He was during his Ph.D. studies at the University of Michigan a Fulbrighter and also a grantee from LADF (the Luso-American Development Foundation) and INVOTAN (the NATO Foundation for Research);
- He was also a grantee of the World Bank during his stay in Gembloux (Belgium) in 1983 to attend the Summer School in Applied Statistics from 'Faculté des Sciences et Centre de Recherches Agronomiques de l'État à Gembloux', as well as at a couple of other situations, in order to be able to attend a few Conferences as it was the case with the 'Symposium uber Operations Research' at the Technische Hochschule Darmstadt, in September 1986 where he presented a communication entitled 'Singular Value Decomposition - a powerful technique for Linear Model Analysis' and the DECUS Europe Symposium in Hamburg, also in September 1986, where he presented a communication entitled 'ANACANOM II – A Metafunction for Data Analysis', a software which was programmed in APL;
- Recently, his Pd.D. student, Ricardo Moura, was awarded a Fulbright Research Grant to pursue, during the school year 2014/2015, his re-

search in the area of 'Data Confidentiality' and 'Data Protection' at the Mathematics and Statistics Department of the University of Maryland, Baltimore County, under the co-supervision of Professor Bimal Sinha.

5. Teaching Activities and Student Supervision

In the most recent years Carlos A. Coelho has been teaching courses in

- *Probability and Statistics*: namely the Probability and Statistics I and II courses from the undergraduate Course in Applied Mathematics at FCT/UNL;
- *Inference and Modeling*: as the courses in 'Applied Statistics' from the undergraduate Course in Applied Mathematics and the course in 'Inference and Statistical Modelization' from the Master Course in Applied Mathematics both at FCT/UNL;
- *Distribution Theory*: as it is the case with the course in 'Distribution Theory' from the Ph.D. program in Statistics and Risk Management at FCT/UNL;
- *Multivariate Statistics*: as the course in 'Advanced Topics in Multivariate Analysis' from the Ph.D. program in Statistics and Risk Management at FCT/UNL;

In the past he taught a variety of courses from Statistics to Mathematical Analysis and Computer Programming, more precisely courses in:

- *Probability and Statistics*: a course taught as part of the Master Course in Mathematics at Universidade Lusíada during the school years 1997/2000;
- *Applied Statistics*: as the course in 'Statistics and Experimental Design' from the undergraduate degrees at ISA/UTL and a quite large number of courses with similar content (inference for means and variances – parametric and non-parametric; Regression Analysis and Analysis of Variance) in a number of different Master Courses both at ISA/UTL as well as at other Institutions, as it was the case of Faculdade de Motricidade Humana and Universidade de Évora, and yet a similar course once taught in Cabo Verde, as part of the a pre-Bolonha undergraduate degree which first three years were taught in Cabo Verde (see details in subsection 5.1.1);
- *Generalized Linear Models*: as it was the case of the course 'Regression and Analysis of Contingency Tables' of the Master Course in Mathematics Applied to the Biological Sciences at ISA/UTL;

- *Multivariate Analysis*: this was a course in Multivariate Analysis which was part of the Master Course in Mathematics Applied to the Biological Sciences at ISA/UTL;
- *Mathematical Analysis*: this was a course in Mathematical Analysis which was part of the undergraduate degrees at ISA/UTL, and also a course that was taught at Cabo Verde as part of the first undergraduate degree fully taught in that country;
- *Computer Programming*: Carlos A. Coelho taught during a number of years the undergraduate course in Computer Programming which was part of the undergraduate courses at ISA/UTL, as well as a number of different Computer Programming and other computer users courses at the Computing Center of ISA/UTL, these during the school years 1984/1986.

Details about the teaching activities follow in the next subsection.

5.1 Details about the Teaching Activity

School Year	Courses
1982/83	- <i>Mathematical Analysis</i> - ISA/UTL (one-year course) - labs.
1983/84	- <i>Calculus</i> - ISA/UTL (one-year course) - labs.
1984/85	- holding appointment at the Computing Center at ISA/UTL – consulting in applied statistics and informatics, teaching of programming and user courses
1985/86	- idem
1986/87	- <i>Informatics</i> - ISA/UTL (one-year course) - lecture-lab classes
1987/88	- <i>Informatics</i> - ISA/UTL (one-year course) - lecture-lab classes
1988/89	- Ph.D. studies at the University of Michigan - Ann Arbor, U.S.A.
1989/90	- idem
1990/91	- idem
1991/92	- conclusion of the Ph.D. program at the University of Michigan, during the first semester - <i>Informatics</i> - ISA/UTL - lecture-lab classes (second semester)
1992/93	- <i>Statistics and Design of Experiments</i> - ISA/UTL - lectures and labs

-
- *Informatics* - ISA/UTL - lecture-lab classes
 - *Statistics I* and *Statistics II* of the Master Course in Vegetable Production at ISA/UTL - coordination and lectures
 - *Quantitative Methods I* of the Master Course in Special Education at Faculdade de Motricidade Humana (FMH/UTL) - lectures
- 1993/94
- *Statistics and Design of Experiments* - ISA/UTL - coordination, lectures and labs
 - *Mathematics II* - ISA/UTL - labs
 - *Statistics I* e *Statistics II* of the Master Course in Vegetable Production at ISA/UTL - coordination and lectures
 - *Statistical Methods and Design of Experiments* of the Master Course in Horticulture at ISA/UTL - coordination and lectures
- 1994/95
- *Statistics and Design of Experiments* - ISA/UTL - classes and labs
 - *Informatics* - ISA/UTL - lecture-lab classes
 - *Statistical Methods and Design of Experiments* of the Master Course in Horticulture at ISA/UTL - coordination and lectures
 - *Quantitative Methods and Models* of the Master Course in Tropical Agriculture at ISA/UTL - coordination and lecture-lab classes
- 1995/96
- *Statistics and Design of Experiments* - ISA/UTL - coordination, lectures and labs
 - *Informatics* - ISA/UTL - lecture-lab classes
 - *Informatics and Statistics* of the Master Course in Applied Mathematics for the Biological Sciences at ISA/UTL - coordination and lectures - shared with Prof. Jorge Cadima from Math. Dep. of ISA/UTL
 - *Multivariate Statistics* of the Master Course in Applied Mathematics for the Biological Sciences at ISA/UTL - coordination and lectures - shared with Prof. Jorge Cadima from Math. Dep. of ISA/UTL
 - *Statistics* of the Master Course in Mathematics at Universidade Lusíada - coordination and lectures
- 1996/97
- *Statistics and Design of Experiments* - ISA/UTL - lectures and labs

-
- *Informatics* - ISA/UTL - lecture-lab classes
 - *Informatics and Statistics* of the Master Programs in Natural Resources Management and Engineering of Wooden-Celulosic Materials at ISA/UTL - coordination and lectures, together with Prof. Manuela Neves from the Math. Dep. at ISA/UTL
 - *Regression Analysis* of the Master Program in Applied Mathematics for the Biological Sciences at ISA/UTL - coordination and lectures
 - *Multivariate Statistics* of the Master Program in Applied Mathematics for the Biological Sciences at ISA/UTL - coordination and lectures, together with Prof. Jorge Cadima from the Math. Dep. of ISA/UTL
 - Modules *Contingency Tables* and *Multivariate Statistics* of the Advanced Course in Statistical Techniques for the Technical Staff at the Statistics Division of the Portuguese Ministry for Agriculture - coordination and lectures (in the second module together with Prof. Jorge Cadima from the Math. Dep. at ISA/UTL)
- 1997/98
- *Statistics and Design of Experiments* - ISA/UTL - coordination and lectures
 - *Informatics* - ISA/UTL - lecture-lab classes
 - *Regression and Analysis of Contingency Tables* of the Master Program in Applied Mathematics for the Biological Sciences at ISA/UTL - coordination and lectures
 - *Multivariate Statistics* of the Master Program in Applied Mathematics for the Biological Sciences at ISA/UTL - coordination and lectures - together with Prof. Jorge Cadima from the Math. Dep. at ISA/UTL
 - *Statistics* of the Master Program in Mathematics at Universidade Lusíada - coordination and lectures
 - *Statistical Methods and Design of Experiments* of the Master Program in Sustainable Agriculture and Horticulture at ISA/UTL - coordination and lectures
 - *Statistical Methods* of the Master Program in Viticulture and Enology at ISA/UTL - coordination and lectures

-
- 1998/99 - *Statistics and Design of Experiments* - ISA/UTL - lectures
- *Informatics* - ISA/UTL - lecture-lab classes
- *Statistics* of the Master Program in Mathematics at Universidade Lusíada - coordination and lectures
- *Statistical Methods and Design of Experiments* of the Master Program in Sustainable Agriculture and Horticulture at ISA/UTL - coordination and lectures - together with Prof. António St.Aubyn from the Math. Dep. of ISA/UTL
- 1999/00 - *Statistics and Design of Experiments* - ISA/UTL - coordination and lectures
- *Statistics* of the Master Program in Mathematics at Universidade Lusíada - coordination and lectures
- *Computers and Information Systems* - ISA/UTL - labs.
- 2000/01 - Sabatical Leave.
- Colaboration in teaching the Course *Numerical Methods* from the Master Program in Animal Production (from the Dep. of Animal Production and Agriculture at ISA/UTL and Faculdade de Medicina Veterinária-FMV/UTL), coordinated by Prof. António St.Aubyn from the Math. Dep. at ISA/UTL.
- Coordination and lecture-lab classes of the first module (sample statistics, basic methods of inference and linear regression) of the course on *Statistics and Design of Experiments* for the undergraduate courses in 'Rural Development and Agro-Economy' and 'Production and Cultures Protection', under the cooperation agreement between ISA/UTL and the Center for Formation of INIDA (Instituto Nacional de Investigação e Desenvolvimento Agrário of the Cape Verde Republic.
- 2001/02 - *Statistics and Design of Experiments* - ISA/UTL and *Statistical Methods and Design of Experiments* - ISA/UTL - coordination, lectures and labs;
- *Computers and Information Systems* - ISA/UTL - labs;
- *Experimental Methodology* from the Master Program in Water and Soil Engineering at Universidade de Évora - coordination, lectures and labs.
- 2002/03 - *Mathematical Analysis I* - ISA/UTL - coordination, lectures and labs.

-
- *Regression and Analysis of Contingency Tables* of the Master Program in Applied Mathematics for the Biological Sciences at ISA/UTL - coordination and lectures
 - *Multivariate Statistics* of the Master Program in Applied Mathematics for the Biological Sciences at ISA/UTL - coordination and lectures
- 2003/04
- *Mathematical Analysis I* - ISA/UTL - labs.
 - *Multivariate Statistics* of the Master Program in Applied Mathematics for the Biological Sciences at ISA/UTL - coordination and lectures, together with Prof. Jorge Cadima from the Math. Dep. of ISA/UTL
 - *Mathematical Analysis* of the first undergraduate course in Rural and Environmental Engineering entirely taught in the Republic of Cape Verde.
- 2004/05
- *Mathematical Analysis I* - labs.
 - *Sabatical Leave* (2nd semester)
- 2005/06
- *Probability and Statistics* - FCT/UNL (Undergraduate degrees in Mechanical Engineering and Industrial Management) - coordination, lectures and labs.
 - *Data Analysis (Multivariate Statistics)* - FCT/UNL (Undergraduate degree in Mathematics) - coordination, lectures and labs.
 - *Applied Statistics* - FCT/UNL (Undergraduate degree in Mathematics) - coordination, lectures and labs.
- 2006/07
- *Probability and Statistics I* - FCT/UNL (Undergraduate degree in Mathematics) - coordination, lectures and labs.
- 2007/08
- *Probability and Statistics I* - FCT/UNL (Undergraduate degree in Mathematics) - coordination, lectures and labs.
 - *Probability and Statistics II* - FCT/UNL (Undergraduate degree in Mathematics) - coordination, lectures and labs.
 - *Applied Statistics* - FCT/UNL (Undergraduate degree in Mathematics) - coordination, lectures and labs.
- 2008/09
- *Probability and Statistics I* - FCT/UNL (Undergraduate degree in Mathematics) - coordination, lectures and labs.
 - *Probability and Statistics II* - FCT/UNL (Undergraduate degree in Mathematics) - coordination, lectures and labs.

-
- *Applied Statistics* - FCT/UNL (Undergraduate degree in Mathematics) - coordination, lectures and labs.
 - 2009/10
 - *Probability and Statistics II* - FCT/UNL (Undergraduate degree in Mathematics) - coordination, lectures and labs.
 - *Advanced Topics in Multivariate Analysis* - FCT/UNL (Ph.D. Program in Statistics and Risk Management) - coordination and lectures.
 - *Probability and Statistics I* - FCT/UNL (Undergraduate degree in Mathematics) - coordination, lectures and labs.
 - *Distribution Theory* - FCT/UNL (Ph.D. Program in Statistics and Risk Management) - coordination and lectures.
 - 2010/11
 - *Probability and Statistics II* - FCT/UNL (Undergraduate degree in Mathematics) - coordination, lectures and labs.
 - *Advanced Topics in Multivariate Analysis* - FCT/UNL (Ph.D. Program in Statistics and Risk Management) - coordination and lectures.
 - *Probability and Statistics I* - FCT/UNL (Undergraduate degree in Mathematics) - coordination, lectures and labs.
 - *Distribution Theory* - FCT/UNL (Ph.D. Program in Statistics and Risk Management) - coordination and lectures.
 - 2011/12 - Sabbatical leave.
 - 2012/13
 - *Probability and Statistics II* - FCT/UNL (Undergraduate degree in Mathematics) - coordination, lectures and labs.
 - *Probability and Statistics I* - FCT/UNL (Undergraduate degree in Mathematics) - coordination, lectures and labs.
 - *Applied Statistics* - FCT/UNL (Undergraduate degree in Mathematics) - coordination, lectures and labs.
 - *Distribution Theory* - FCT/UNL (Ph.D. Program in Statistics and Risk Management) - coordination and tutorial.
 - 2013/14
 - *Probability and Statistics II* - FCT/UNL (Undergraduate degree in Mathematics) - coordination, lectures and labs.
 - *Inference and Statistical Modelization* - FCT/UNL (master Course in Mathematics and its Applications) - coordination, lectures and labs.
 - *Probability and Statistics I* - FCT/UNL (Undergraduate degree in Mathematics) - coordination, lectures and labs.

-
- *Applied Statistics* - FCT/UNL (Undergraduate degree in Mathematics) - coordination, lectures and labs.
 - 2014/15
 - *Probability and Statistics II* - FCT/UNL (Undergraduate degree in Mathematics) - coordination, lectures and labs.
 - *Inference and Statistical Modelization* - FCT/UNL (master Course in Mathematics and its Applications) - coordination, lectures and labs.
 - *Probability and Statistics I* - FCT/UNL (Undergraduate degree in Mathematics) - coordination, lectures and labs.
 - *Applied Statistics* - FCT/UNL (Undergraduate degree in Mathematics) - coordination, lectures and labs.
 - 2015/16
 - *Probability and Statistics II* - FCT/UNL (Undergraduate degree in Mathematics) - coordination, lectures and labs.
 - *Probability and Statistics I* - FCT/UNL (Undergraduate degree in Mathematics) - coordination, lectures and labs.
 - *Applied Statistics* - FCT/UNL (Undergraduate degree in Mathematics) - coordination, lectures and labs.
 - 2016/17
 - *Probability and Statistics II* - FCT/UNL (Undergraduate degree in Mathematics) - coordination, lectures and labs.
 - *Multivariate Statistics* - FCT/UNL (Master degree in Applied Mathematics) - coordination, lectures and labs.
 - *Advanced Topics in Multivariate Analysis* - FCT/UNL (Ph.D. program in Statistics and Risk Management) - coordination, lectures and labs.
 - *Probability and Statistics I* - FCT/UNL (Undergraduate degree in Mathematics) - coordination, lectures and labs.
 - *Applied Statistics* - FCT/UNL (Undergraduate degree in Mathematics) - coordination, lectures and labs.
 - 2017/18
 - *Probability and Statistics II* - FCT/UNL (Undergraduate degree in Mathematics) - coordination, lectures and labs.
 - *Probability and Statistics I* - FCT/UNL (Undergraduate degree in Mathematics) - coordination, lectures and labs.
 - *Applied Statistics* - FCT/UNL (Undergraduate degree in Mathematics) - coordination, lectures and labs.

5.2 Supervision of Post-Doc Grants

Supervision of the FCT grant SFRH/BPD/109751/2015 awarded to Miguel dos Santos Fonseca (FCT/UNL), started on September 2016.

5.3 Supervision of Ph.D. and Master Theses

– Ph.D. Theses

- Student name: Vusi Bilankulu
Subject: Development of near-exact distributions for likelihood ratio test statistics for tests on mean vectors when the covariance matrices have multi-layer block structures.
Ph.D. Program: Statistics at the Statistics Department of the University of Pretoria (South-Africa)
 (ongoing, co-advisor with Andriette Bekker from Univ. of Pretoria)
- Student name: Bárbara Regadas Correia
Subject: The multi-sample hyperblock-matrix sphericity test — exact and near-exact distributions for its likelihood ratio test statistic.
Ph.D. Program: Statistics and Risk Management at the College of Science and Technology of the New University of Lisbon
 (ongoing, co-advisor with Filipe Marques from FCT/UNL)
- Student name: Ricardo Moura
Subject: The application of near-exact distributions to high-dimensional situations in Multivariate Analysis.
Ph.D. Program: Statistics and Risk Management at the College of Science and Technology of the New University of Lisbon
 (awarded in 2016, co-advisor with Professor Bimal Sinha from the University of Maryland Baltimore County)
- Student name: Filipe José Gonçalves Pereira Marques
Subject: Near-exact distributions for likelihood ratio test statistics used in Multivariate Analysis.
Ph.D. Program: Mathematics/Statistics at the College of Science and Technology of the New University of Lisbon
 (awarded in 2007 - advisor)
- Student name: Rui Manuel Pesado Alberto
Subject: Development of near-exact distributions for likelihood ratio test statistics.
Ph.D. Program: Mathematics and Statistics at Mathematics Department of the Lisbon University of Technology
 (awarded in 2007 - advisor)

- Student name: Luis Miguel Lindinho da Cunha Mendes Grilo
Subject: Development of near-exact distributions for several scenarios of application of the Wilks Lambda statistic.
Ph.D. Program: Mathematics and Statistics at the Mathematics Department of the Lisbon University of Technology
(awarded in 2006 - advisor)
- Student name: Nuno Miguel Cavalheiro Marques
Subject: Development of a methodology for the statistical modeling of verbal subcategorization.
Ph.D. Program: Computer Science at College of Science and Technology of the New University of Lisbon
(awarded in 2000, co-advisor with Gabriel Pereira Lopes, researcher from the Computer Science Department at FCT/UNL)

– **Master Theses**

Post-Bolonha

- Student name: Paula Marques
Subject: The one-sample Block-Matrix Sphericity Test: Exact and Near-exact Distributions for the Test Statistic.
Master Program: Applied Mathematics FCT/UNL
(awarded in 2012 - co-advisor with Filipe Marques from FCT/UNL)

Pre-Bolonha

- Student name: Fernanda Filipe Ferreira
Subject: Development and detailed study of a trivariate Generalized Integer Gamma distribution and associated non-linear regression model.
Master Program: Applied Mathematics for the Biological Sciences at the Lisbon University of Technology
(awarded in 2007 - advisor)
- Student name: César Duarte Alves Rocha
Subject: Near-exact distributions for the likelihood ratio test statistic to test equality of several covariance matrices.
Master Program: Applied Mathematics for the Biological Sciences at the Lisbon University of Technology
(awarded in 2006 - advisor)

-
- Student name: Eunice Mata da Nazaré Osório Ferreira
Subject: Application of log-linear models to studies of drought class transitions in the Alentejo region.
Master Program: Applied Mathematics for the Biological Sciences at the Lisbon University of Technology
 (awarded in 2004 - advisor)

 - Student name: Inês do Castelo Lopes Garcia Lino
Subject: A near-exact distribution for the product of an odd number of independent Beta random variables, based on a mixture of two Generalized Integer Gamma distributions. Application to the distribution of the generalized Wilks Lambda statistic.
Master Program: Mathematics at Lusíada University
 (awarded in 2003 - advisor)

 - Student name: Maria Paula Rodrigues Marques
Subject: Studies on the distribution of the sum of two independent random variables, one with a Gamma-ratio distribution and the other with a Generalized Integer Gamma distribution. Application to the development of near-exact distributions for the generalized Wilks Lambda statistic.
Master Program: Mathematics at Lusíada University
 (awarded in 2003 - advisor)

 - Student name: Maria Júlia Mellert Mendes Nunes da Fonseca
Subject: Application of log-linear models to the study of inquiries.
Master Program: Mathematics at Lusíada University
 (awarded in 2002 - advisor)

 - Student name: Nuno Miguel David da Cruz António
Subject: Application of Generalized Linear Models to an ornithological study. Study of zonal submodels.
Master Program: Applied Mathematics for the Biological Sciences at the Lisbon University of Technology
 (awarded in 2002 - advisor)

 - Student name: Rui Manuel Pesado Alberto
Subject: The exact distribution of the Wilks Lambda statistic when both sets of variables have an odd number of variables.
Master Program: Mathematics at Lusíada University
 (awarded in 1998 - advisor)

-
- Student name: Jorge Lourenço
Subject: Development and study of asymptotic distributions for the Wilks Lambda statistic. Computation and comparison of exact and asymptotic quantiles.
Master Program: Mathematics at Lusíada University
 (awarded in 1998 - advisor)
 - Student name: Rita Maria de Almeida Neres
Subject: Application of multivariate linear models and sub-models to the study of the hydrological balance in *Eucalyptus globulus* stands.
Master Program: Applied Mathematics for the Biological Sciences at the Lisbon University of Technology
 (awarded in 1998 - advisor)
 - Student name: Leonor Rosália Catarino
Subject: Application of Multivariate Analysis of Variance models to the study of the production of three varieties of *Rubus* spp.
Master Program: Applied Mathematics for the Biological Sciences at the Lisbon University of Technology
 (awarded in 1998 - advisor)
 - Student name: Henrique Manuel Bolas Chia
Subject: Corn sowing in permanent irrigated humps.
Master Program: Hydric Resources at at the Lisbon University of Technology
 (awarded in 1995, co-advisor)

5.4 Participation in Doctoral and Master Evaluation Committees

- Member of the Public Evaluation Committee for the Ph.D. Thesis of Paulo Jorge Canas Rodrigues, entitled "New strategies to detect and understand genotype-by-environment interactions and QTL-by-environment interactions" (Ph.D. program in Mathematics and Statistics at ISA/UTL, 2012);
- Debater of the Public Evaluation Committee for the Ph.D. Thesis of Elsa Maria Félix Gonçalves, entitled "Spatial Statistical Models for Studies on Vegetable Populations" (Ph.D. program in Mathematics and Statistics at ISA/UTL, 2009);

-
- Member of the Public Evaluation Committee for the Ph.D. Thesis of Dora Prata Gomes, entitled "Computational Methods in the Interval and Point Estimation of the Extremal Index" (Ph.D. program in Mathematics/Statistics at FCT/UNL, 2008);
 - Member of the Public Evaluation Committee for the Ph.D. Thesis of Elsa Estêvão Fachadas Nunes Moreira, entitled "Structured Families of Models with a Base Orthogonal Model" (Ph.D. program in Mathematics/Statistics at FCT/UNL, 2008);
 - Member of the Public Evaluation Committee for the Ph.D. Thesis of Pedro José dos Santos Palhinhas Mota, entitled "Brownian Motion with Drift Threshold Model" (Ph.D. program in Mathematics/Statistics at FCT/UNL, 2008);
 - Member of the Public Evaluation Committee for the Ph.D. Thesis of Miguel dos Santos Fonseca, entitled "Estimation and hypothesis testing in mixed linear models" (Ph.D. program in Mathematics/Statistics at FCT/UNL, 2007);
 - Member of the Public Evaluation Committee for the Ph.D. Thesis of Filipe José Gonçalves Pereira Marques, entitled "Near-exact distributions for likelihood ratio test statistics" (Ph.D. program in Mathematics/Statistics at FCT/UNL, 2007);
 - Member of the Public Evaluation Committee for the Ph.D. Thesis of Ricardo Jorge Viegas Covas, entitled "Orthogonal mixed models and commutative Jordan Algebras" (Ph.D. program in Mathematics/Statistics at FCT/UNL, 2007);
 - Member of the Public Evaluation Committee for the Ph.D. Thesis of João Filipe Lita da Silva, entitled "Strong Consistency of Estimators: the Least Squares Estimator" (Ph.D. program in Mathematics/Statistics at FCT/UNL, 2007);
 - Member of the Public Evaluation Committee for the Ph.D. Thesis of Luís Pedro Carneiro Ramos, entitled "Near-normality and inference for series of matched studies" (Ph.D. program in Mathematics/Statistics at FCT/UNL, 2007);
 - Member of the Public Evaluation Committee for the Master Thesis of Fernanda Maria Rodrigues Filipe Ferreira, entitled "Trivariate Generalized Integer Gamma" (Master program in Applied Mathematics for the Biological Sciences at ISA/UTL, 2007);
 - Member of the Public Evaluation Committee for the Master Thesis of César Duarte Alves Rocha, entitled "Near-exact distributions for

the likelihood ratio statistic to test the equality of several covariance matrices” (Master program in Applied Mathematics for the Biological Sciences at ISA/UTL, 2006);

- Member of the Public Evaluation Committee for the Ph.D. Thesis of Dário Jorge da Conceição Ferreira, entitled ”Inductive Pivot Variables and Variance Components in Orthogonal Normal Models” (Ph.D. program in Mathematics at Universidade da Beira Interior, 2006);
- Member of the Public Evaluation Committee for the Ph.D. Thesis of Sandra Maria Bargão Saraiva Ferreira, entitled ”Inference for Orthogonal Models with Segregation” (Ph.D. program in Mathematics at Universidade da Beira Interior, 2006);
- Member of the Public Evaluation Committee for the Ph.D. Thesis of Ayana Maria Xavier Furtado Mateus, entitled ”Modeling of the Dynamic Structure of First Rotation *Eucalyptus globulus* stands” (Ph.D. program in Mathematics/Statistics at FCT/UNL, 2005);
- Member of the Public Evaluation Committee for the Ph.D. Thesis of Célia Maria Pinto Nunes, entitled ”F and Related Tests for Mixed Models with Orthogonal Cross-Nesting” (Ph.D. program in Mathematics at Universidade da Beira Interior, 2005);
- Member of the Public Evaluation Committee for the Ph.D. Thesis of Iola Maria Silvério Pinto, entitled ”Joint Regression Analysis and Breeding Designs” (Ph.D. program in Mathematics/Statistics at FCT/UNL, 2005);
- Member of the Public Evaluation Committee for the Master Thesis of Eunice Mata da Nazaré Osório Ferreira, entitled ”Application of Log-linear Models to the Study of Drought Class Transition Probabilities in the Alentejo Region” (Master program in Applied Mathematics for the Biological Sciences at ISA/UTL, 2004);
- Member of the Public Evaluation Committee for the Ph.D. Thesis of Maria de Fátima Varregoso Miguens, entitled ”Bivariate Model for Maximum Flows” (Ph.D. program in Mathematics/Statistics at FCT/UNL, 2004);
- Debater, together with Professor Stanislaw Mejza from the University of Poznan (Poland) of the Public Evaluation Committee for the Ph.D. Thesis of Dulce Gamito Santinhos Pereira, entitled ”Weighted Joint Regression Analysis for a Network of Designs” (Ph.D. program in Mathematics at Universidade de Évora);

-
- Debater of the Public Evaluation Committee for the Master Thesis of Elsa Estêvão Fachadas Nunes, entitled "Regression Models for the Electrodeposition of Heavy Metals from Wood Waste" (Master program in Statistics and Optimization at FCT/UNL, 2003);
 - Debater, together with Professor Pavel Brazdil from Universidade do Porto, of the Public Evaluation Committee for the Ph.D. Thesis of Joaquim Francisco Ferreira da Silva, entitled "Textual Unit Extraction - Grouping, Characterization and Classification of Documents" (Ph.D. program in Computer Science at FCT/UNL, 2003);
 - Debater of the Public Evaluation Committee for the Master Thesis of Ricardo Jorge Viegas Covas, entitled "Semi-Bayesian Inference and Variance Components Models" (Master program in Mathematics/Statistics at FCT/UNL, 2003);
 - Debater of the Public Evaluation Committee for the Master Thesis of Clara Maria Henrique Cordeiro, entitled "Forecasting Models for Time Series. Application of the Bootstrap Methodology" (Master program in Statistics and Optimization at FCT/UNL, 2003);
 - Debater, together with Professor Donia Scott from the University of Brighton, of the Public Evaluation Committee for the Ph.D. Thesis of António Manuel Batista Ribeiro, entitled "Parallel Texts Alignment for Extraction of Translation Equivalents" (Ph.D. program in Computer Science at FCT/UNL, 2002);
 - Member of the Public Evaluation Committee for the Master Thesis of Maria Paula Rodrigues Marques, entitled "Studies on the Distribution of the Sum of two Independent Random Variables, one With a Gamma-Ratio Distribution and the Other with a Generalized Integer Gamma Distribution. Application to the Development of Near-exact Distributions for the Generalized Wilks Lambda Statistic" (Master program in Mathematics at Universidade Lusíada, 2002);
 - Member of the Public Evaluation Committee for the Ph.D. Thesis of Nuno Cavalheiro Marques, entitled "A Methodology for the Statistical Modeling of Verbal Sub-categorization" (Ph.D. program in Computer Science at FCT/UNL, 2000);
 - Member of the Public Evaluation Committee for the Master Thesis of Inês do Castelo Lopes Garcia Lino, entitled "A Near-exact Distribution for the Product of an Odd Number of Independent Beta Random Variables, Based on a Mixture of Two Random Variables with a Generalized Near-Integer Gamma Distribution. Application to

-
- the Distribution of the Generalized Wilks Lambda Statistic” (Master Program in Mathematics at Universidade Lusíada, 1999);
- Member of the Public Evaluation Committee for the Master Thesis of Nuno Miguel David da Cruz António, entitled ”Application of Generalized Linear Models to an Orthonological Study. Development of Zonal Models” (Master Program in Applied Mathematics to the Biological Sciences at ISA/UTL, 1999);
 - Member of the Public Evaluation Committee for the Master Thesis of Júlia Mellert Mendes Nunes da Fonseca, entitled ”Application of Log-linear Models to the Study of Enquiries. Development and Study of Models for Tables with a Dominant Diagonal Structure” (Master Program in Mathematics at Universidade Lusíada, 1998);
 - Member of the Public Evaluation Committee for the Master Thesis of António Manuel Martins Benito de Sousa, entitled ”Applications of Visualization in Statistics” (Master Program in Applied Mathematics to the Biological Sciences at ISA/UTL, 1998);
 - Member of the Public Evaluation Committee for the Master Thesis of João Manuel das Neves Silva, entitled ”Application of Multivariate Statistics Techniques to the Cartography of Burned Areas with Landsat 5 TM Satellite Images” (Master Program in Applied Mathematics to the Biological Sciences at ISA/UTL, 1998);
 - Member of the Public Evaluation Committee for the Master Thesis of Leonor Rosália Catarino, entitled ”Application of MANOVA Models to the Study of the Production of *Rubus* spp.” (Master Program in Applied Mathematics to the Biological Sciences at ISA/UTL, 1998);
 - Member of the Public Evaluation Committee for the Master Thesis of Rita Maria de Almeida Neres, entitled ”Application of Multivariate Models and Submodels to the Study of the Hydrological Balance in Stands of *Eucaliptus globulus*” (Master Program in Applied Mathematics to the Biological Sciences at ISA/UTL, 1998);
 - Member of the Public Evaluation Committee for the Master Thesis of Jorge Lourenço, entitled ”Development and Study of Asymptotic Distributions for the Wilks Lambda Statistic. Computation and Comparison of Exact and Asymptotic Quantiles” (Master Program in Mathematics at Universidade Lusíada, 1998);
 - Member of the Public Evaluation Committee for the Master Thesis of Rui Pesado Alberto, entitled ”The exact Distribution of the Wilks Lambda Statistic when Both Sets of Variables Have an Odd Number of

Variables” (Master Program in Mathematics at Universidade Lusíada, 1998).

6. Research Activities

Main research area: Distribution Theory, Inference, Hypotheses testing (with applications in Multivariate Analysis, namely in tests for mean and covariance structures, and in testing error covariance structures for Generalized Mixed Models)

- *Development of likelihood ratio tests for elaborate structures of covariance matrices and corresponding near-exact distributions:* work on the development of likelihood ratio tests for elaborate structures of covariance matrices which may be used in tests for error covariance structures in Generalized Mixed Linear Models, namely the development of a likelihood ratio test which may have as particular cases the most common likelihood ratio tests for covariance matrices as the test of independence of sets of variables and the test of equality of covariance matrices, as well as the two wider families of likelihood ratio tests of the multi-sample block-matrix and multi-sample block-scalar sphericity tests; the ultimate objective being the development of near-exact distributions for these likelihood ratio statistics, with the aim of rendering their practical use feasible, given the non-manageability of their exact distributions. We will call this test the multi-sample hyper-block matrix sphericity test. In the recent past, near-exact distributions were already developed (and published) for the two families of multi-sample block-matrix and multi-sample block-scalar sphericity tests and the development of the one-sample version of the hyper-block matrix sphericity test and the corresponding near-exact distributions is already concluded, with ongoing work on the multi-sample version of the test.
- *Development of likelihood ratio tests for testing equality of means and equality of mean vectors under structured covariance matrices:* development of likelihood ratio tests and obtaining the exact and near-exact distributions for the associated test statistics for tests for means and mean vectors in situations where the covariance matrices exhibit some well-defined pattern, as circularity, compound symmetry or sphericity.

- *Development of likelihood ratio tests for tests of equality of covariance matrices under well-defined patterns for these matrices:* development of likelihood ratio tests and obtaining the exact and near-exact distributions for the associated test statistics for tests of equality of covariance matrices, in situations where these matrices exhibit some well-defined pattern, as circularity, compound symmetry or sphericity. these tests are of interest namely when applying the above mentioned tests for mean vectors, since those tests assume the equality of the covariance matrices for the underlying populations.
- *Near-exact distributions:* In a 2004 paper in the Journal of Multivariate Analysis Carlos A. Coelho (Coelho,2004^[7])¹ laid the foundations for what he called near-exact distributions and since then these have been successfully applied to a large number of statistics. These are asymptotic distributions which are built using a different philosophy in approximating the exact characteristic function of statistics. The technique combines an adequately developed decomposition of the characteristic function, most often a factorization, with the action of keeping then most of this characteristic function unchanged, while replacing the remaining ‘smaller’ part by an adequate asymptotic approximation. All this is done in order to obtain what is called a near-exact characteristic function, which corresponds to a known, manageable and very well-fitting distribution, which may then be used to compute near-exact quantiles or p-values. These distributions are much useful in situations where it is not possible to obtain the exact distribution in a manageable form while at the same time the common asymptotic distributions do not yield the desired performance. The near-exact distributions may be easily implemented even for tests of highly complicated structures for covariance matrices, by considering the decomposition of the null hypothesis into a set of conditionally independent hypotheses (Coelho and Marques, 2009^[18]).
- *Development of exact distributions for a large number of likelihood ratio tests used in Multivariate Analysis:* Carlos Agra Coelho authored another paper in 1998 (Coelho, 1998^[2]) in the Journal of Multivariate Analysis where the author established what he called the Generalized Integer Gamma distribution which is the

¹Numbers inside square brackets refer to the paper number in Sec. 8, subsec. 8.2

distribution of the sum of independent Gamma random variables with integer shape parameters and different scale parameters, obtaining the expressions for its probability density and distribution functions in a closed and very manageable form; the results in this paper which are nowadays referenced in a number of Multivariate Analysis books and papers, as well as in a number of wireless and communication technology papers, may also be used to obtain finite form representations for several instances of the Meijer G and Fox H functions and are being used as the basis for a book which will be entitled “Finite form representations of instances of Meijer G and Fox H functions – Applications: implementing likelihood ratio tests in Multivariate Analysis”, already accepted for publication by Springer, and with publication planned for 2017. In this book, as an application of the results obtained, the exact distributions for more than 30 tests used in Multivariate Analysis are obtained in a very manageable, with the computation of all the corresponding statistics, distributions, p -values and quantiles implemented in MATHEMATICA, MAXIMA and R.

Other research areas of interest:

- *Statistical applications to issues in Data Protection and Data Confidentiality:* This is an area which has recently caught the attention of Carlos A. Coelho, as a consequence of joint work with Professor Bimal Sinha from the Mathematics and Statistics Department of the University of Maryland Baltimore County (UMBC), who is co-advising (together with Carlos A. Coelho) Ricardo Moura, a Ph.D. student from the Doctoral Program in Statistics and Risk Management at FCT/UNL to whom a 10 month Fulbright Research Grant was awarded during the school year 2014/2015 in order to carry out research work at UMBC; a joint paper is being submitted and a second one is being prepared in this area.
- *The precise estimation of very small tail probabilities for censored data – Statistical applications to Food Safety:* This is also an area of recent work, together with Professor Ben Kedem from the Mathematics Department of the University of Maryland (College Park, Washington) on which a joint paper is submitted.
- Univariate and Multivariate Linear and Generalized Linear Models

- namely unifying approaches, both algebraic-geometrical and inferential, of several multivariate and univariate linear models, based on the Generalized Canonical Analysis model and further generalizations of this model (the Generalized Canonical Analysis model, developed as part of the Ph.D. Thesis work is referred ‘Generalized Canonical Variables’ (Ashis SenGupta) in Encyclopedia of Statistical Sciences (0024) and Wiley StatsRef: Statistics Reference Online (2014), John Wiley & Sons, Inc.).
- Computational Statistics
 - development of computational modules (using the softwares Mathematica, MAXIMA and R) for the computation of exact and near-exact distributions and associated p -values and quantiles.
- Applications of Statistics to several areas, namely in linguistics, agronomical and meteorological studies.

7. Seminars and Invited Lectures

- | | |
|------------------|--|
| September 2018 | – Invited Speaker at the upcoming International Conference on Statistics, Mathematical Modelling and Analysis (SMMA 2018) to be held in Chongqing, China |
| December 7, 2017 | – Invited keynote speaker at the 10th International Statistics Congress in celebration of the 25th Anniversary of the Turkish Statistical Association (Ankara University, December 6–8, 2017) with the oral presentation entitled “Near Exact Distributions – problems they can solve” |
| July 10, 2017 | – Invited speaker at the 11th Workshop on Statistics, Mathematics and Computation held at Universidade Aberta and Polytechnic Institute of Portalegre from 10-12 July, 2017, with the oral presentation entitled “Trimmed Likelihood Ratio Test Statistics – an unexpected improvement in power” |
| June 8, 2017 | – Invited speaker at ASMDA 2017, 17th Conference of the Applied Stochastic Models and Data Analysis International Society in honor of the 70th |

-
- birthday of Gilbert Saporta, which took place at the De Morgan House of the London Mathematical Society from 6 to 9 June 2017, with the presentation of the oral communication entitled “The Likelihood Ratio Test for the Equality of Mean Vectors when the Covariance Matrices are Block Compound Symmetric”
- March 21, 2017 – Keynote Speaker at the 4th African International Conference on Statistics, which took place in Polokwane, South Africa, 20-23 March, 2017, with the presentation of the oral communication entitled “Near-exact Distributions - Closer than Common Asymptotic Distributions”
- October 15, 2016 – Invited Speaker at the International Conference on Statistical Distributions and Applications, which took place in Niagara Falls, Canada, October 14-16, 2016, with the presentation of the oral communication entitled “Likelihood ratio test for the equality of mean vectors when the joint covariance matrix is Block-circulant”
- May 27, 2016 – Invited speaker at the Xth Workshop on Statistics, Mathematics and Computation, and Vth Portuguese-Polish Workshop on Biometry – Instituto Politécnico de Tomar on May 26-28, 2016, with the presentation of the oral communication entitled “Tests for equality of mean vectors with structured covariance matrices”.
- May 20, 2016 – Invited speaker at the 10th Probability and Statistics Day at UMBC (University of Maryland Baltimore County), in celebration of Professor Bimal Sinha 70th birthday, which took place on May 20-21, 2016, with the talk entitled “Likelihood based inference methods for Statistical Disclosure Control - joint work with Professor Bimal Sinha”.
- March 13, 2016 – Invited speaker at Scientific Session of the Jubilee Celebration of Professor Roman Zmyslony, which took place on March 13, 2016, at the Department of Mathematics, Computer Science and Econometrics of the University of Zielona Gora, Poland, with the talk entitled “Testing block-compound symmetry vs. block-matrix sphericity”.

-
- July 31, 2015 – Invited speaker at the Special Topic Session “Statistical Modeling of Multi-level Multivariate Data Using Kronecker Product Structured Covariance Matrices” at the 60th ISI World Statistics Congress, with the talk entitled “Developing near-exact distributions for likelihood ratio statistics to test for Kronecker product structures in covariance matrices”.
 - April 18, 2015 – Invited speaker at the 9th Probability and Statistics Day at UMBC (University of Maryland Baltimore County), with the talk entitled “Near-exact distributions for likelihood ratio statistics used in testing mean vectors with patterned covariance matrices”.
 - Feb. 9, 2015 – Invited speaker at the 1st JORTEC-Mathematics at FCT/UNL with the talk entitled “Intuition, Reality, and the need for solid Data Analysis methodology” (in Portuguese).
 - August 28, 2013 – Invited speaker at the Special Topics Session on ‘Distribution Theory’, entitled “Is Distribution Theory still relevant?” at the 59th ISI World Statistics Congress, with the talk entitled “Near-exact distributions - What are they and why do we need them?”.
 - April 30, 2013 – Statistics Seminar at the Department of Mathematics of the University of Maryland, College Park, Washington DC, entitled “Testing block-circularity of the covariance matrix and bridging to the compound symmetry and block-sphericity tests”.
 - April 27, 2013 – Plenary Invited Speaker at the 7th Probability and Statistics Day at UMBC (University of Maryland Baltimore County), with a talk entitled “The Likelihood Ratio Test for Block-Circularity of the Covariance Matrix – Developing Near-exact Distributions for the Test Statistic”.
 - Feb. 14, 2013 – Seminar in Mathematical Statistics at the Department of Computer and Information Science of the Linköping University, Linköping, Sweden, entitled “Bridging between the block-circularity and the compound symmetry tests”.

-
- Feb. 4, 2013 – Seminar at the Institute of Mathematical Sciences of University of Malaya at Kuala Lumpur, Malaysia, entitled “Near-exact distributions for the Products of Beta random variables”.
 - July 19, 2012 – Invited speaker at the Special Session in Honor of George P. H. Styan at the LINSTAT/IWMS 2012 Conference - International Conference on Trends and Perspectives in Linear Statistical Inference & 21st International Workshop on Matrices and Statistics – Bedlewo, Poland, July 16-20, 2012.
 - July 3, 2012 – Invited speaker at the 6th Workshop on Statistics, Mathematics and Computation and 3rd Portuguese-Polish Workshop on Biometry – Covilhã, Portugal, July 3-4, 2012.
 - May 16, 2012 – Statistics Seminar at the Statistics Department of the Marmara University in Istanbul entitled “On the product of independent Beta random variables — how near-exact distributions can help”.
 - May 11, 2012 – Statistics Students Seminar at the Statistics Department of the Fine Arts (Mimar Sinan) University of Istanbul entitled “An efficient measure of distance between exact and approximate quantiles when we do not know the exact quantile value”.
 - May 10, 2012 – Statistics Students Seminar at the Statistics Department of the Fine Arts University of Istanbul entitled “An efficient measure of distance between two distributions – even when we do not have the expression neither for their p.d.f. nor for the c.d.f.”
 - May 9, 2012 – Statistics Seminar at the Statistics Department of the Fine Arts (Mimar Sinan) University of Istanbul entitled “Near-exact distributions — why do we need them and how can we build them”
 - May 4, 2012 – Statistics Seminar at EPFL (École Polytechnique Fédérale de Lausanne), entitled “On the distribution of the product of independent Beta random variables – why near-exact distributions?”
 - March 30, 2012 – Invited Plenary Speaker at JOCLAD 2012 – “XIX Jornadas de Classificação e Análise de Dados”, Tomar, Portugal, where he presented the communication entitled “Intuition, Reality, Data Analysis and Inference”

-
- Sep. 6, 2011 – Keynote speaker at the 17-th European Young Statisticians Meeting where the communication entitled “The multi-sample block sphericity test — exact and near-exact distributions for its likelihood ratio test statistic” was presented
 - July 11, 2011 – Invited speaker at the *5th Workshop on Statistics, Mathematics and Computation – Methods and Applications*, Universidade do Algarve, July 11-12, 2011, where he presented the communication entitled “ Bounds and improved computation for approximate quantiles”
 - Aug. 31, 2010 – Invited speaker at the *40th International Biometrical Colloquium and Second Polish-Portuguese Workshop on Biometry* (in honor of Prof. J. T. Mexia) held by the Polish Biometric Society in Bedlewo-Poznan (Poland), with the communication entitled “The Distribution of the Test Statistic for Testing Equality of two Generalized Variances in the Non-central Linear Case - An Example of Application of the Results on the Distribution of the Product of Independent Gamma-Ratio Random Variables”.
 - June 1st, 2007 – Invited speaker at the *16th International Workshop on Matrices and Statistics*, held at the University of Windsor (Canada), where he presented the communication entitled “Testing for structure in covariance matrices”, in co-authorship with Filipe J. Marques;
 - May 6, 2005 – Invited speaker at the *I Workshop Estatística, Matemática e Computação* of Universidade Aberta, where he presented the communication entitled ”Relações entre a função geradora de momentos completa e incompleta e momentos completos e incompletos para distribuições na família exponencial” (‘Relations Among the Complete and Incomplete Moment Generating Functions and the Complete and Incomplete Moments, for Distributions in the Exponential Family’).

-
- Aug. 13, 2000 – Invited speaker at the IX International Colloquium on Numerical Analysis and Computer Science with Applications - Plovdiv Technical University - Plovdiv, Bulgaria – *Numerical approximations to ratios of Gamma functions with applications in Statistics.*
 - June 27, 2000 – Instituto Superior de Agronomia (ISA/UTL) - Mathematics Department – *The concept of Near-exact Distribution and Some of Its Applications*” (in Portuguese).
 - Mar. 15, 2000 – Mathematics and Statistics Department - USA (University of South Alabama, Alabama, U.S.A.) – Math-Stat Student Club: *What Statisticians do for a living at Portugal and other countries.*
 - Mar. 14, 2000 – Mathematics and Statistics Department - USA (University of South Alabama, Alabama, U.S.A.): *The concept of near-exact distribution. Some of its applications;*
 - March 7, 2000 – Statistics Department - UCR (University of California at Riverside): *The concept of near-exact distribution. Some of its applications;*
 - Feb. 29, 2000 – Statistics Department - UCLA (University of California at Los Angeles): *The concept of near-exact distribution. Some of its applications;*
 - Jun. 26, 1997 – Computer Science Department - FCT/UNL - *Log-linear Models: application to Natural Language Studies;*
 - Feb. 14, 1996 – Mathematics Department - ISA/UTL: *The Wilks Lambda statistic as a generalization of the F Statistic. New developments about its distribution;*
 - Dec. 13, 1995 – Statistics and Operations Research Department - Faculdade de Ciências of Universidade de Lisboa: *The Wilks Lambda statistic as a generalization of the F statistic. New developments about its distribution;*

8. Publications

8.1 Books

2. Coelho, C. A., Arnold, B. C. (2016) *Finite Form Representations of Instances of Meijer G and Fox H Functions – Applications to the implementation of likelihood ratio tests used in Multivariate Analysis*, Springer, 450+xv pp. (accepted for publication in the Lecture Notes in Statistics Series, with prospective publication in 2018).
1. Coelho, C. A., Mexia, J. T. (2010) *Product and Ratio of Generalized Gamma-Ratio Random Variables: Exact and Near-exact Distributions - Applications*. Lambert Academic Publishing AG & Co. KG, Saarbrücken, Germany, 145+v pp. (ISBN: 978-3-8383-5846-8)

8.2 Papers in International Journals with referee

54. Marques, F. J., Coelho, C. A. (2018). The simultaneous test of equality and circularity of several covariance matrices, *Journal of Statistical Theory and Practice* (in print) (<https://www.tandfonline.com/doi/full/10.1080/15598608.2018.1482806>)
53. Correia, B. R., Coelho, C. A., Marques, F. J. (2018). Likelihood ratio test for the hyper-block matrix sphericity covariance structure – characterization of the exact distribution and development of near-exact distributions for the test statistic, *REVSTAT*, **16**, 365–403.
52. Marques, F. J., Coelho, C. A., Rodrigues, P. C. (2017). Testing the equality of several linear regression models, *Computational Statistics*, **32**, 1453–1480 (DOI:10.1007/s00180-016-0703-1)
51. Coelho, C. A., Roy, A. (2017). Testing the hypothesis of a block compound symmetric covariance matrix for elliptically contoured distributions, *TEST*, **26**, 308–330. (DOI:10.1007/s11749-016-0512-4)
50. Moura, R., Klein, M., Coelho, C. A., Sinha, B. (2017). Inference for Multivariate Regression Model based on Synthetic Data generated under Fixed-Posterior Predictive Sampling: Comparison with Plug-in Sampling, *REVSTAT*, **15**, 2, 155–186.
49. Kedem, B., Pan, L., Zhou, W., Coelho, C. A. (2016). Interval Estimation of Small Tail Probabilities – Applications in Food Safety, *Statistics in Medicine*, **35**, 3229–3240. (DOI:10.1002/sim.6921) (WOS: 000380025100014)

-
48. Marques, F. J., Coelho, C. A. (2016). Near-exact Distributions for Positive Linear Combinations of Independent Non-central Gamma Random Variables, *AIP Conference Proceedings*, **1738**, 190005-1–190005-4. (DOI:10.1063/1.4951972) (WOS: 000380803300211)
 47. Coelho, C. A., Marques, F. J., Oliveira, S. (2016). Near-exact distributions for likelihood ratio statistics used in the simultaneous test of conditions on mean vectors and patterns of covariance matrices, *Mathematical Problems in Engineering*, Volume 2016, Article ID 8975902, 25 pages. (DOI:10.1155/2016/8975902) (WOS: 000373462000001) (MR 3481146)
 46. Coelho, C. A., Marques, F. J., Arnold, B. C. (2015). The exact and near-exact distributions of the main likelihood ratio test statistics used in the complex multivariate normal setting, *Test*, **24**, 386–416 + supplementary material, 14pp. (DOI:10.1007/s11749-014-0418-y) (WOS: 000354714100011) (MR 3348217) (Zbl 06451232)
 45. Marques, F. J., Coelho, C. A., de Carvalho, M. (2015). On the distribution of linear combinations of independent Gumbel random variables, *Statistics and Computing*, **25**, 3, 683–701 +supplementary material, 5pp. (DOI:10.1007/s11222-014-9453-5) (WOS: 000352705000013) (MR 3334425) (Zbl 1331.62088)
 44. Marques, F. J., Coelho, C. A. (2015). The sphericity versus equivariance-euicorrelation test, *AIP Conference Proceedings*, **1648**, 540009.1–540009.4. (DOI:10.1063/1.4912755) (WOS: 000355339703032)
 43. Marques, F. J., Coelho, C. A. (2015). Near-exact Distributions for the Likelihood Ratio Test Statistic for Testing Multi-Sample Independence The Real and Complex Cases, *Journal of Statistical Theory and Practice*, **9**, 1, 37–58. (DOI:10.1080/15598608.2014.915157) (MR 3275531)
 42. Marques, F. J., Coelho, C. A. (2014). A Note on the Distribution of the Linear Combination of Independent Gamma Random Variables, *AIP Conference Proceedings*, **1618**, 527–530. (DOI:10.1063/1.4912755) (WOS: 000346015200114)
 41. Coelho, C. A., Arnold, B. C. (2014). On the exact and near-exact distributions of the product of generalized Gamma random variables and the generalized variance, *Communications in Statistics – Theory and Methods*, **43**, 2007–2033. (DOI:10.1080/03610926.2013.783073) (WOS: 000335944600003) (MR 3217793) (Zbl06331041)
 40. Marques, F. J., Coelho, C. A. (2013). Obtaining the exact and near-exact distributions of the likelihood ratio statistic to test circular symmetry through the use of characteristic functions, *Computational Statistics*,

-
- 28**, 2091–2115. (DOI:10.1007/s00180-013-0398-5) (WOS: 000324813700010) (MR 3107293) (Zbl 1306.65097)
39. Coelho, C. A., Marques, F. J. (2013). The multi-sample block-scalar sphericity test: exact and near-exact distributions for its likelihood ratio test statistic, *Communications in Statistics – Theory and Methods*, **42**, 1153–1175. (DOI:10.1080/03610926.2012.704542) (WOS:000321690400003) (MR 3031274) (Zbl 06175390)
38. Arnold, B. C., Coelho, C. A., Marques, F. J. (2013). The distribution of the product of powers of independent Uniform random variables, *Journal of Multivariate Analysis*, **113**, 19–36 (special issue on Multivariate Distribution Theory in Memory of Samuel Kotz). (DOI:10.1016/j.jmva.2011.04.006) (WOS:000310865300004) (MR 2984353) (Zbl 06111191)
37. Coelho, C. A., Marques, F. J., Oliveira, S. (2013). The exact distribution of the likelihood ratio test statistic used to test simultaneously the equality of means and circularity of the covariance matrix, *AIP Conference Proceedings*, **1558**, 789–792. (DOI:10.1063/1.4825613) (WOS: 000331472800188)
36. Grilo, L. M., Coelho, C. A. (2013). Near-exact distributions for the likelihood ratio statistic used to test the reality of a covariance matrix, *AIP Conference Proceedings*, **1558**, 797–800. (DOI:10.1063/1.4825615) (WOS: 000331472800190)
35. Marques, F. J., Coelho, C. A., (2013). The multisample block-diagonal equicorrelation and equivariance test, *AIP Conference Proceedings*, **1558**, 793–796. (DOI:10.1063/1.4825614)(WOS: 000331472800189)
34. Coelho, C. A., Marques, F. J. (2013). Near-exact distributions for the block equicorrelation and equivariance likelihood ratio test statistic, *AIP Conference Proceedings*, **1557**, 429–433. (DOI:10.1063/1.4823950) (WOS: 000326625000088)
33. Marques, F. J., Coelho, C. A. (2013). The multi-sample block-scalar sphericity test under the complex multivariate normal case, *AIP Conference Proceedings*, **1557**, 420–423. (DOI:10.1063/1.4823948) (WOS: 000326625000086)
32. Marques, F. J., Coelho, C. A. (2012). Near-exact distributions for the likelihood ratio test statistic of the multi-sample block-matrix sphericity test. *Applied Mathematics and Computation*, **219**, 2861–2874. (DOI:10.1016/j.amc.2012.08.059) (WOS: 000310649900004) (MR 2991987) (Zbl 1309.62101)

-
31. Coelho, C. A., Marques, F. J. (2012). Near-exact distributions for the likelihood ratio test statistic to test equality of several variance-covariance matrices in elliptically contoured distributions. *Computational Statistics*, **27**, 627-659. (DOI:10.1007/s00180-011-0281-1) (WOS: 000310379900003) (MR 3041850) (Zbl 1304.65024)
 30. Coelho, C. A., Arnold, B. C. (2012). Instances of the product of independent beta random variables and of the Meijer G and Fox H functions with finite representations. *AIP Conference Proceedings*, **1479**, 1133-1137. (DOI:10.1063/1.4756348) (WOS:000310698100274)
 29. Marques, F. J., Coelho, C. A. (2012). The multi-sample independence test. *AIP Conference Proceedings*, **1479**, 1129-1132. (DOI:10.1063/1.4756347) (WOS:000310698100273)
 28. Grilo, L. M., Coelho, C. A. (2012). A family of near-exact distributions based on truncations of the exact distribution for the generalized Wilks Lambda statistic. *Communications in Statistics - Theory and Methods*, **41**, 2321-2341. (DOI:10.1080/03610926.2011.604146) (WOS: 000305208600005) (MR 2927712)
 27. Marques, F. J., Coelho, C. A. (2012). The block sphericity test – exact and near-exact distributions for the likelihood ratio statistic. *Mathematical Methods in the Applied Sciences*, **35**, 373–383. (DOI: 10.1002/mma.1497) (WOS:000300676600001) (MR 2898875) (Zbl 06014554)
 26. Marques, F. J., Coelho, C. A., Arnold, B. C. (2011) A general near-exact distribution theory for the most common likelihood ratio test statistics used in Multivariate Analysis. *TEST*, **20**, 1, 180–203. (DOI:10.1007/s11749-010-0193-3) (WOS:000290222100014) (MR 2806316(2012j:62198))
 25. Coelho, C. A., Marques, F. J. (2011) On the exact, asymptotic and near-exact distributions for the likelihood ratio statistics to test equality of several Exponential distributions. *AIP Conference Proceedings*, **1389**, 1471-1474. (DOI:10.1063/1.3637902) (WOS:000302239800353)
 24. Marques, F. J., Coelho, C. A. (2011) The multi-sample block-matrix sphericity test. *AIP Conference Proceedings*, **1389**, 1479-1482. (DOI:10.1063/1.3637904) (WOS:000302239800355)
 23. Coelho, C. A., Marques, F. J. (2010) Near-exact distributions for the independence and sphericity likelihood ratio test statistics. *Journal of Multivariate Analysis*, **101**, 583-593. (DOI:10.1016/j.jmva.2009.09.012) (WOS:000273834800008) (MR 2575406) (Zbl:1181.62077)
 22. Marques, F. J., Coelho, C. A. (2010) The exact and near-exact distributions of the likelihood ratio statistic for the block sphericity test.

-
- AIP Conference Proceedings*, **1281**, 1237-1240. (DOI:10.1063/1.3497907) (WOS:000289661500331)
21. Coelho, C. A., Arnold, B. C., Marques, F. J. (2010) Near-exact distributions for certain likelihood ratio test statistics. *Journal of Statistical Theory and Practice*, **4**, 4, 711-725 (invited paper for the special memorial issue in honor of H. C. Gupta, guest-edited by C. R. Rao). (DOI:10.1080/15598608.2010.10412014) (MR 2758755)
 20. Grilo, L. M., Coelho, C. A. (2010) Near-exact distributions for the generalized Wilks Lambda statistic. *Discussiones Mathematicae - Probability and Statistics*, **30**, 53-86. (MR 2766057) (Zbl 1208.62022)
 19. Grilo, L. M., Coelho, C. A. (2010) The exact and near-exact distributions for the Wilks Lambda statistic used in the test of independence of two sets of variables. *American Journal of Mathematical and Management Sciences*, **30**, 1-2, 111-145. (DOI:10.1080/01966324.2010.10737781) (MR 2828941)
 18. Coelho, C. A., Marques, F. J. (2009) The advantage of decomposing elaborate hypotheses on covariance matrices into conditionally independent hypotheses in building near-exact distributions for the test statistics. *Linear Algebra and its Applications*, **430**, 2592-2606. (DOI:10.1016/j.laa.2008.07.003) (WOS:000265473000004) (MR 2509843(2010d:62142)) (Zbl 1160.62055)
 17. Marques, F. J., Coelho, C. A. (2008) Near-exact distributions for the sphericity likelihood ratio test statistic. *Journal of Statistical Planning and Inference*, **138**, 726-741. (DOI:10.1016/j.jspi.2007.01.002) (WOS:000253099800014) (MR 2382885(2008k:62115)) (Zbl 1138.62033)
 16. Moreira, E. E., Coelho, C. A., Paulo, A. A., Pereira, L. S., Mexia, J. T. (2008). SPI-based drought category prediction using loglinear models. *Journal of Hydrology*, **354**, 116-130. (DOI:10.1016/j.jhydrol.2008.03.002) (WOS:000257005800010)
 15. Coelho, C. A., Mexia, J. T. (2007) On the distribution of the product and ratio of independent generalized Gamma-ratio random variables. *Sankhya*, **69**, 2, 221-255. (MR 2428869) (Zbl 1192.62037)
 14. Coelho, C. A. (2007). The wrapped Gamma distribution and wrapped sums and linear combinations of independent Gamma and Laplace distributions. *Journal of Statistical Theory and Practice*, **1**, 1, 1-29. (invited paper for first issue of the Journal) (DOI:10.1080/15598608.2007.10411821) (MR 2354613) (Zbl 1130.62011)

-
13. Alberto, R. P., Coelho, C. A. (2007). Study of the quality of several asymptotic and near-exact approximations based on moments for the distribution of the Wilks Lambda statistic. *Journal of Statistical Planning and Inference*, **137**, 5, 1612-1626. (DOI:10.1016/j.jspi.2006.09.009) (WOS:000244215400009) (MR 2303779) (Zbl 1110.62021)
 12. Grilo, L. M., Coelho, C. A. (2007). Development and study of two near-exact approximations to the distribution of the product of an odd number of independent Beta random variables. *Journal of Statistical Planning and Inference*, **137**, 5, 1560-1575. (DOI:10.1016/j.jspi.2006.09.005) (WOS:000244215400005) (MR 2303776) (Zbl 1110.62020)
 11. Coelho, C. A. (2006). The exact and near-exact distributions of the product of independent Beta random variables whose second parameter is rational. *Journal of Combinatorics, Information & System Sciences*, **31**, 21-44. (MR 2351709)
 10. Coelho, C. A. (2006). The joint characterization of discrete and continuous 'waiting times' through their reciprocal relationship. *Journal of Interdisciplinary Mathematics*, **9**, 2, 297-318. (DOI:10.1080/09720502.2006.10700445) (Zbl pre05187067)
 9. Coelho, C. A., Alberto, R. P. and Grilo, L. M. (2006). A mixture of Generalized Integer Gamma distributions as the exact distribution of the product of an odd number of independent Beta random variables: applications. *Journal of Interdisciplinary Mathematics*, **9**, 2, 229-248. (DOI:10.1080/09720502.2006.10700441) (MR 2245158) (Zbl 1117.62017)
 8. Paulo, A. A., Ferreira, E., Coelho, C. A. e Pereira, L. S. (2005). Drought Class Transition Analysis through Markov and Loglinear Models. *Agricultural Water Management*, **77**, 59-81. (DOI:10.1016/j.agwat.2004.09.039) (WOS:000230868100005)
 7. Coelho, C. A. (2004). The Generalized Near-Integer Gamma distribution – a basis for 'near-exact' approximations to the distributions of statistics which are the product of an odd number of particular independent Beta random variables. *Journal of Multivariate Analysis*, **89**, 2, 191-218. (DOI:10.1016/j.jmva.2003.12.001) (WOS:000221483200001) (MR 2063631(2005d:62024)) (Zbl 1047.62014)
 6. Silva, J., Mexia, J. T., Coelho, C. A. and Lopes, G. P. (2004). A Statistical Approach for Multilingual Document Clustering and Topic Extraction from Clusters. *Pliska Studia Mathematica Bulgarica*, **16**, 207-228. (MR 2070316)

5. Coelho, C. A. (2003). A Generalized Integer Gamma distribution as an asymptotic replacement for a Logbeta random variable – applications. *American Journal of Mathematical and Management Sciences*, **23**, 383-399. (DOI:10.1080/01966324.2003.10737619) (MR 2045533(2005b:62040))
4. Coelho, C. A. (2000). On two Asymptotic Normal Distributions for the Generalized Wilks Lambda Statistic. *Communications in Statistics - Theory and Methods*, **29**, 7, 1465-1486. (DOI:10.1080/03610920008832557) (WOS:000087746800004) (MR 1793300(2001h:62099)) (Zbl1018.62041)
3. Coelho, C. A. (1999). Addendum to the paper 'The Generalized Integer Gamma Distribution - a Basis for Distributions in Multivariate Analysis'. *Journal of Multivariate Analysis*, **69**, 281-285. (DOI:10.1006/jmva.1998.1805)(WOS:000080242200008)(MR 1703376(2000c:62013b))(Zbl0937.62054)
2. Coelho, C. A. (1998). The Generalized Integer Gamma Distribution – a Basis for Distributions in Multivariate Statistics. *Journal of Multivariate Analysis*, **64**, 86-102. (DOI:10.1006/jmva.1997.1710) (WOS:000072485300005) (MR 1619986(2000c:62013a)) (Zbl0893.62046)
1. Coelho, C. A. (1994). Brief note on the distribution of a weighted sample dispersion matrix. *Journal of the Indian Statistical Association*, **32**, 2, 77-81. (MR 1333121)

8.3 Book Chapters and Papers Published in Books, with referee

18. Coelho, C. A. (2018). Likelihood ratio tests for equality of mean vectors with circular covariance matrices, in Oliveira, T. A., Kitsos, C., Oliveira, A., Grilo, L. M. (eds.), “Recent Studies on Risk Analysis and Statistical Modeling”, Lecture Notes in Statistics, Springer, 13pp. (in print).
17. Coelho, C. A. (2017). The Likelihood Ratio Test for Equality of Mean Vectors with Compound Symmetric Covariance Matrices, in *Computational Science and Its Applications*, Gervasi, O., Murgante, B., Misra, S., Borruso, G., Torre, C. M., Rocha, A. M. A. C., Taniar, D., Apduhan, B. O., Stankova, E., Cuzzocrea, A. (eds.), Lecture Notes in Computer Science 10408, Vol. V, Springer, pp.20–32 (ISBN: 978-3-319-62403-7, 978-3-319-62404-4 (eBook); DOI: 10.1007/978-3-319-62404-4).
16. Grilo, L. M., Coelho, C. A. (2017). The exact and near-exact distributions for the statistic used to test the reality of covariance matrix in a complex normal distribution, in *Applied and Computational Matrix*

-
- Analysis*, Bebiano, N. (ed.), Springer Proceedings in Mathematics & Statistics 192, Springer, pp. 295–315 (ISBN: 978-3-319-49982-6).
15. Coelho, C. A., Marques, F. J. (2014). A double decomposition of the test of independence of sets of variables that allows for a modeling view of this test, in *Mathematical Methods in Science and Mechanics*, Mastorakis, N. E., Mainardi, F. and Milanova, M. (eds.), pp.13-19 (ISBN: 978-960-474-396-4).
 14. Marques, F. J., Coelho, C. A., Marques, P. (2013). The Block-Matrix Sphericity Test: Exact and Near-exact Distributions for the Test Statistic, in *Recent Developments in Modeling and Applications in Statistics — Studies in Theoretical and Applied Statistics: Selected Papers of the Statistical Societies*, Oliveira, P. E., Temido, M. G., Henriques, C. and Vichi, M. (eds.), Springer, pp.169-177.
 13. Coelho, C. A., Arnold, B. C., Marques, F. J. (2011). Near-exact Distributions for Certain Likelihood Ratio Test Statistics, in *Advances in Quantitative Methods*, C. R. Rao and Sat Gupta (eds.), Grace Scientific Publishing LLS, USA, pp. 97–111. (ISBN: 978-0-9823998-1-1)
 12. Marques, F. J., Coelho, C. A. (2009) The multi-sample sphericity test - how to use the decomposition of the null hypothesis in developing near-exact approximations to the distribution of the test statistic (in Portuguese), in *Estatística - Arte de Explicar o Acaso (Statistics - The Art of Explaining Randomness)*, *Actas do XVI Congresso Anual da Sociedade Portuguesa de Estatística*, Irene Oliveira, Elisete Correia, Fátima Ferreira, Sandra Dias, Carlos Braumann (eds.), 417-428.
 11. Coelho, C. A., Alberto, R. P. and Grilo, L. M. (2006) A mixture of Generalized Integer Gamma distributions as the exact distribution of the product of an odd number of independent Beta random variables. Applications, in *Advances in Interdisciplinary Mathematics*, S. Gupta & B. K. Dass (eds.), 1-20. (also published in *Journal of Interdisciplinary Mathematics*, **9**, 2, 229-248)
 10. Coelho, C. A. (2006) The joint characterization of discrete and continuous 'waiting times' through their reciprocal relationship, in *Advances in Interdisciplinary Mathematics*, S. Gupta & B. K. Dass (eds.), 69-90. (also published in *Journal of Interdisciplinary Mathematics*, **9**, 2, 297-318)
 9. Cunha-Queda, A. C., Vallini, G., Agnolucci, M., Coelho, C. A., Campos, L., Bruno-de-Sousa, R. (2001) Microbiological and chemical characterisation of composts at different levels of maturity, with evaluation of

-
- phytotoxicity and enzymatic activities, in *Microbiology of Composting*, Insam, H., Klammer, S. and Riddech, N. (eds.), Springer-Verlag, 345-356.
8. Silva, J., Mexia, J. T., Coelho, C. A., Lopes, G. P. (2001). Multilingual document clustering, topic extraction and data transformations, in *Progress in Artificial Intelligence, Knowledge Extraction, Multi-agent Systems, Logic Programming and Constraint Solving, 10th Portuguese Conference on Artificial Intelligence, EPIA 2001. Proceedings*, Brazdil, P. and Jorge, A. (eds.), Lecture Notes in Computer Science 2258, Springer, 74-87. [Zbl 1053.68641]
 7. Silva, J., Mexia, J. T., Coelho, C. A., Lopes, G. P. (2001). Document clustering and cluster topic extraction in multilingual corpora, in *Proceedings of the 2001 IEEE International Conference on Data Mining, ICDM 2001*, Cercone, N., Lin, T. Y. and Wu, X. (eds.), IEEE Computer Society, 513-520.
 6. Marques, N. C., Lopes, G. P. e Coelho, C. A. (1999). A Loglinear model for the study of integral subordinate sentences (in Portuguese), in *Linguística Computacional: Investigação Fundamental e Aplicações*, Marrafa, P. e Mota, M. A. (eds.), Assoc. Port. de Linguística, Ed. Colibri, Lisboa, 151-171.
 5. Neres, R. M., Coelho, C. A. (1998). MANOVA Models and Profile Analysis. A Different Approach (in Portuguese), in *Estatística: A Diversidade na Unidade, Actas do V Congresso Anual da Sociedade Portuguesa de Estatística*, 447-456.
 4. Marques, N. C., Lopes, G. P. e Coelho, C. A. (1998). Learning verbal transitivity using Log-linear models, in *Machine Learning. Proc. 10th Europ. Conf. on Machine Learning ECML '98*, Lecture Notes in Artificial Intelligence 1398, Springer, 19-24.
 3. Marques, N. C., Lopes, G. P. e Coelho, C. A. (1998). Using Loglinear clustering for subcategorization identification, in *Principles of Data Mining and Knowledge Discovery. Proc. 2nd Europ. Symposium PKDD'98*, Lecture Notes in Artificial Intelligence 1510, Springer, 379-387. [WOS: 000083636500043]
 2. Fonseca, M. J. e Coelho, C. A. (1998). Application of log-linear models to the study of contingency tables with a diagonal structure (in Portuguese), in *Estatística: A Diversidade na Unidade. Actas do V Congresso Anual da Sociedade Portuguesa de Estatística*, 437-446.

1. Coelho, C. A. (1987). The Singular Value Decomposition of a Matrix in Factorial Data Analysis Methods (in Portuguese), *Actas XII Jornadas Luso-Espanholas de Matemática*, Vol II, 43-49. [MR 1139130]

8.4 Theses, Academic Essays and Works related with Academic Degrees

1. Coelho, C. A. (2000). *Notes for a lecture in 'Multivariate Statistics'* (in Portuguese). Class notes presented as part of the requirements for the public trial for the Habilitation Degree in Mathematics/Statistics at the Mathematics Department of Instituto Superior de Agronomia (Universidade Técnica de Lisboa), 27 pp.
2. Coelho, C. A. (2000). *Syllabus and Teaching Methodology, with detailed description of Lectures and Labs for the Course 'Statistics and Design of Experiments'*. Work presented as part of the requirements for the public trial for the Habilitation degree in Mathematics/Statistics at the Mathematics Department of Instituto Superior de Agronomia (Universidade Técnica de Lisboa), 104pp.
3. Coelho, C. A. (1992). *Generalized Canonical Analysis*. Ph.D. Thesis. The Univ. of Michigan. Ann Arbor, MI, USA, 182pp.
4. Coelho, C. A. (1986). *Factorial Data Analysis Methods* (in Portuguese). Synthesis presented for 'Provas de Capacidade Científica e Aptidão Pedagógica'. Inst. Sup. Agronomia (ISA/UTL), Lisbon, 253pp.
5. Coelho, C. A. (1986). *The Singular Decomposition of a Matrix* (in Portuguese). Report of a lecture presented at 'Provas de Capacidade Científica e Aptidão Pedagógica'. Inst. Sup. Agronomia (ISA/UTL), Lisbon, 39pp.
6. Coelho, C. A. (1982). *Pome Phenology - a new approach*. Undergraduate Degree Final Report, ISA/UTL, Lisboa, 38pp.

8.5 Didactical Texts and Books in preparation

1. *Topics in Probability and Statistics - Vol. I* (in Portuguese), 395 pp. (Chap.^s 1-5). Class notes for the undergraduate course 'Probability and Statistics I' at FCT/UNL, 2000, 2006, 2008,2012. (book in preparation) (https://dl.dropboxusercontent.com/u/82069378/Tomo_I.pdf)

-
2. *Topics in Probability and Statistics - Vol. II* (in Portuguese), 401 pp. (Chap.^s 6-9). Class notes for the undergraduate courses 'Probability and Statistics I' (Chap.^s 6 and 7) and 'Probability and Statistics II' (Chap.^s 8 and 9) at FCT/UNL, 2000, 2006, 2008,2014. (book in preparation)(https://dl.dropboxusercontent.com/u/82069378/Tomo_II.pdf)
 3. *Topics in Probability and Statistics - Vol. III* (in Portuguese), 148 pp. (Chap.^s 10-12). Class notes for the undergraduate course 'Probability and Statistics II' at FCT/UNL, 2007, 2009,2014. (book in preparation)(https://dl.dropboxusercontent.com/u/82069378/Tomo_III.pdf)
 4. *Solved problems of Topics in Probability and Statistics - Vol. I and II* (in Portuguese), 153 pp. Class notes for the undergraduate course 'Probability and Statistics I' at FCT/UNL, 2007, 2009. (book in preparation) (https://dl.dropboxusercontent.com/u/82069378/Exer_tomo_I.II.pdf)
 5. *Solved problems of Topics in Probability and Statistics - Vol. II and III* (in Portuguese), 73 pp. Class notes for the undergraduate course 'Probability and Statistics II' at FCT/UNL, 2007, 2009,2014. (book in preparation)(https://dl.dropboxusercontent.com/u/82069378/Exer_tomo_II_III.pdf)
 6. *Linear Models - Regression and Analysis of Variance*, c. 220 pp. (in Portuguese, incomplete). Former class notes for the undergraduate courses 'Statistics and Design of Experiments' and 'Statistical Methods and Design of Experiments' at ISA/UTL and (after some revision and augmentation) current class notes for the course 'Applied Statistics' of the undergraduate degree in Mathematics at FCT/UNL, 1992, 1996, 2006, 2008. (book in preparation)
 7. *Topics in Multivariate Statistics and Multivariate Methods in Multivariate Analysis* (in Portuguese). Class notes for the Master course 'Multivariate Statistics' of the Master Program in Applied Mathematics to the Biological Sciences at ISA/UTL and for the course 'Advanced Topics in Multivariate Statistics' of the Ph.D. Program in Statistics and Risk Management at FCT/UNL, 1996, 1998, 2010, 45pp.
 8. *Generalized Linear Models* (in Portuguese). Class notes for the courses 'Regression and Analysis of Contingency Tables' of the Master Program in Applied Mathematics to the Biological Sciences, the course 'Statistics II' of the Master Program in 'Vegetable Production' and the course 'Statistical Methods and Design of Experiments' from the Master Program in 'Sustainable Agriculture and Horticulture', all at ISA/UTL, Lisbon, 20pp.

8.6 Works related with Applications for Academic Positions

1. Coelho, C. A. (2004). *Syllabus and detailed Teaching Methods for lectures and labs for the courses 'Probability and Statistics I' e 'Probability and Statistics II' at FCT/UNL* (in Portuguese). Synthesis presented as part of the requirements for a public application for Associate Professor at the Mathematics Department of FCT/UNL (Faculdade de Ciências e Tecnologia of Universidade Nova de Lisboa), 158pp.
2. Coelho, C. A. (2001). *Syllabus and detailed Teaching Methods for lectures and labs for the courses 'Statistics' and 'Statistical Methods and Design of Experiments'* (in Portuguese). Synthesis presented as part of the requirements for a public application for Associate Professor at the Mathematics Department of ISA/UTL (Instituto Superior de Agronomia of Universidade Técnica de Lisboa), 143pp.

8.7 Other publications

24. Coelho, C. A., Roy, A. (2016). Testing elaborate block-structures in covariance matrices by splitting the null hypothesis - an overview, *Proceedings of the 60th ISI World Statistics Congress, 26-31 July 2015, Rio de Janeiro, Brazil*, Special Topics Session 009, 677–682.
23. Marques, F. J., Coelho, C. A. (2016). Developing near-exact distributions for likelihood ratio statistics to test for Kronecker product structures in covariance matrices, *Proceedings of the 60th ISI World Statistics Congress, 26-31 July 2015, Rio de Janeiro, Brazil*, Special Topics Session 069, 1023–1028.
22. Coelho, C. A., Marques, F. J., Arnold, B. C. (2015). Preface for the Special issue on Distribution Theory, Estimation, and Inference, *Journal of Statistical Theory and Practice*, **9**, 1. (DOI:10.1080/15598608.2015.975629)
21. Coelho, C. A. (2015). Preface of the "4th Symposium on Distribution Theory, Estimation and Inference". *AIP Conference Proceedings*, **1648**, 540001-1. (DOI:10.1063/1.4912747)
20. Coelho, C. A. (2014). Near-exact distributions – what are they and why do we need them? *Proceedings 59th ISI World Statistics Congress, Special Topics Session 084 "Is distribution theory still relevant?"*, 2879–2884.
19. Coelho, C. A. (2013). George P. H. Styan – a celebration, *Discussiones Mathematicae – Probability and Statistics*, **33**, 7–40. (Zbl 1314.01016)

-
18. Coelho, C. A., Puntanen, S. (2013). Preface, *Discussiones Mathematicae – Probability and Statistics*, **33**, 5–6. (Zbl 1315.00086)
 17. Coelho, C. A. (2013). Preface of the "3rd Symposium on Distribution Theory, Estimation and Inference". *AIP Conference Proceedings*, **1558**, 788.
 16. Coelho, C. A., Rodrigues, A. M. (2012). A review of "Linear Mixed Models: A Practical Guide Using Statistical Software by Brady T. West, Kathleen B. Welch, and Andrzej T. Gałeczki", Chapman & Hall/CRC Press (2006). *Journal of Statistical Theory and Practice*, **6**, 590-595. (DOI:10.1080/15598608.2012.695708)
 15. Coelho, C. A. (2012). Preface of the "2nd Symposium on Distribution Theory, Estimation and Inference". *AIP Conference Proceedings*, **1479**, 1109.
 14. Coelho, C. A. (2012). Near-exact Distributions – Needing Them and Building Them, *Gaudium Sciendi*, **1**, 100-122, U.C.P. (invited paper for the first number).
 13. Coelho, C. A. (2011). Preface of the "Symposium on Distribution Theory, Estimation and Inference". *AIP Conference Proceedings*, **1389**, 1462.
 12. Coelho, C. A. (2010). Symposium: Inference and Estimation in Mixed Linear Models. *AIP Conference Proceedings*, **1281**, 1228. [WOS: 000289661500328]
 11. Coelho, C. A., Pestana, D. (2009). Biography of Professor João Tiago Praça Nunes Mexia. *Discussiones Mathematicae – Probability and Statistics*, **29**, 95-113.
 10. Coelho, C. A., Esquível, M. L., Mexia, J. T. (2009). Research in Statistics – CMA - Universidade Nova de Lisboa (in Portuguese). *Boletim Soc. Port. de Estat.*, Primavera 2009, 10-21.
 9. Coelho, C. A. (2006). *Laudatory Speech at the Honoris Causa Ceremony for Professor C. R. Rao*, September 1, 2006, Universidade Nova de Lisboa.
 8. Cunha-Queda, A. C., Coelho, C. A., Vallini, G., Bruno-de-Sousa, R. (2002). Profile analysis and functional modeling of enzymatic activities during composting of vegetable wastes, in *Composting and Compost Utilization*, Michel, F. C., Rynk, R. F. and Hitink, H. A. J. (eds.), CD-ROM edition (20 pp).

-
7. Coelho, C. A. (2002). *Report of the presence at the 14th General Assembly of IMU (International Mathematical Union)* – Shangai, August 17-18, 2002.
 6. Coelho, C. A. (2002). *Eurodicautom European Dictionary in Statistics*. Part of the Portuguese version, c. 1200 terms (European Dictionary of Statistical Terms: <http://europa.eu.int/eurodicautom/Controller>).
 5. Marques, N. C., Lopes, G. P. e Coelho, C. A. (1999). Mining subcategorization information by using multiple feature loglinear models. *Selected papers from the 10th CLIN meeting, CLIN'99*. UILOTS, Utrecht. Edited by Paola Monachesi, p. 117-126. (<http://www.uilots.let.uu.nl/publications/clin1999/proceedings.html>)
 4. Coelho, C. A. (1988). Nucleus for an expert system in Data Analysis (in Portuguese). *APLicações – Journal of the Portuguese Association for the APL Language*, No. 2, 122-127.
 3. Coelho, C. A. (1987). A Metafunction for Data Analysis – ANACANOMII. *APL-CAM Journal – Journal of the Belgian APL-CAM Users Soc.*, **9**, No. 2, 346-365. (Reprinted from *Proceedings of the 1986 Digital Equipment Users Society Europe Symposium*.)
 2. Coelho, C. A. (1986). A Metafunction for Data Analysis – ANACANOMII. *Proceedings of the 1986 Digital Equipment Users Soc. Europe Symposium*, 153-171.
 1. Coelho, C. A., Rosa, M. L. and Moreira, I. (1980). Allelopathic effects of *Cistus ladanifer* L. (in Portuguese), in *I Congresso Português de Fitiatria e Fitofarmacologia - III Simpósio Nacional de Herbologia*, 165-178.

8.8 Preprints

46. Moura, R., Klein, M., Zylstra, J., Coelho, C. A., Sinha, B. (2018). Inference for multivariate regression model based on synthetic data generated using plug-in sampling. US Census Bureau, Research Report Series, Statistics #2018-02, Washington USA.
45. Moura, R., Klein, M., Coelho, C., Sinha, B. (2015). Inference for Multivariate Regression Model based on Synthetic Data generated using Plug-in Sampling. *Technical Report CMA 2-2016*, CMA-FCT/UNL (published in *REVSTAT*).

-
44. Coelho, C. A., Marques, F. J., Oliveira, S. (2015). Near-exact distributions for likelihood ratio statistics used in the simultaneous test of conditions on mean vectors and patterns of covariance matrices. *Relatório Técnico CMA 4-2015*, CMA-FCT/UNL (published in *Mathematical Problems in Engineering*).
 43. Correia, B. R., Coelho, C. A., Marques, F. J. (2015). Likelihood ratio test for the hyper-block matrix sphericity covariance structure – characterization of the exact distribution and development of near-exact distributions for the test statistic. *Technical Report CMA 1-2015*, CMA-FCT/UNL (accepted for publication in *REVSTAT*).
 42. Coelho, C. A., Singull, M. (2013). Testing for double complete symmetry. *Technical Report CMA 16-2013*, CMA-FCT/UNL.
 41. Coelho, C. A. (2013). The eigenblock and eigenmatrix decomposition of a matrix: its usefulness in Statistics – application to the likelihood ratio test for block-circularity. *Technical Report CMA 11-2013*, CMA-FCT/UNL.
 40. Coelho, C. A., Marques, F. J. (2013). Near-exact Distributions for the Block Equicorrelation and Equivariance Likelihood Ratio Test Statistic. *Technical Report CMA 5-2013*, CMA-FCT/UNL (published in *AIP Conference Proceedings*).
 39. Coelho, C. A., Roy, A. (2013). Testing of hypothesis of a block compound symmetric covariance matrix. *Technical Report CMA 3-2013*, CMA-FCT/UNL (published in *TEST*).
 38. Coelho, C. A., Arnold, B. C. (2012). On the exact and near-exact distributions of the product of generalized Gamma random variables and the generalized variance. *Technical Report CMA 24-2012*, CMA-FCT/UNL (published in *Communications in Statistics – Theory and Methods*).
 37. Coelho, C. A., Alberto, R. P. (2012). On the distribution of the product of independent Beta random variables — Applications. *Technical Report CMA 12-2012*, CMA-FCT/UNL.
 36. Coelho, C. A., Arnold, B. C. (2012). Instances of the Meijer G and Fox H Near-exact distributions for the product of independent Beta random variables with finite representations. *Technical Report CMA 11-2012*, CMA-FCT/UNL.
 35. Marques, F. J., Coelho, C. A., de Carvalho, M. (2012). Exact and near-exact distributions of positive linear combinations of independent Gumbel random variables. *Technical Report CMA 1-2012*, CMA-FCT/UNL (published in *Statistics and Computing*).

-
34. Coelho, C. A., Marques, F. J. (2011). The multi-sample block-scalar sphericity test — exact and near-exact distributions for its likelihood ratio test statistic. *Technical Report* CMA 19-2011, CMA-FCT/UNL (published in *Communications in Statistics – Theory and Methods*).
 33. Coelho, C. A., Marques, F. J., Arnold, B. C. (2011). A general approach to the exact and near-exact distributions of the main likelihood ratio test statistics used in the complex multivariate Normal setting. *Technical Report* CMA 15-2011, CMA-FCT/UNL (published in *TEST*).
 32. Marques, F. J., Coelho, C. A., Marques, P. (2011). The block-matrix sphericity test — exact and near-exact distributions for the test statistic. *Technical Report* CMA 9-2011, CMA-FCT/UNL (published in *Recent Developments in Modeling and Applications in Statistics — Studies in Theoretical and Applied Statistics: Selected Papers of the Statistical Societies*).
 31. Grilo, L. M., Coelho, C. A. (2011). A family of near-exact distributions based on truncations of the exact distribution for the generalized Wilks Lambda statistic. *Technical Report* CMA 5-2011, CMA-FCT/UNL (published in *Communications in Statistics – Theory and Methods*).
 30. Coelho, C. A., Oliveira, S., Marques, F. J. (2011). Exact and near-exact distributions for the likelihood ratio test statistics used to test for stationarity and circularity in multivariate models. *Technical Report* CMA 4-2011, CMA-FCT/UNL (published, together with other results, in *Mathematical Problems in Engineering*).
 29. Marques, F. J., Coelho, C. A. (2011). The exact and near-exact distributions of the likelihood ratio test statistics for testing circular symmetry. *Technical Report* CMA 1-2011, CMA-FCT/UNL (published in *Computational Statistics*).
 28. Marques, F. J., Coelho, C. A. (2010). The exact and near-exact distributions of the likelihood ratio statistic for the block sphericity test. *Technical Report* CMA 20-2010, CMA-FCT/UNL (published in *Mathematical Methods in the Applied Sciences*).
 27. Coelho, C. A., Arnold, B. C., Marques, F. J. (2010). Another look at the exact and near-exact distributions for the most common likelihood ratio test statistics used in multivariate analysis. *Technical Report* CMA 13-2010, CMA-FCT/UNL (published in *Journal of Statistical Theory and Practice*).

-
26. Coelho, C. A., Marques, F. J. (2009). Near-exact distributions for the likelihood ratio test statistic for testing equality of several variance-covariance matrices (revisited). *Technical Report CMA 8-2009*, CMA-FCT/UNL (published in *Computational Statistics*).
 25. Coelho, C. A., Arnold, B. C., Marques, F. J. (2009). The distribution of the product of powers of independent uniform random variables. *Technical Report CMA 3-2009*, CMA-FCT/UNL (published in *Journal of Multivariate Analysis*).
 24. Grilo, L. M., Coelho, C. A. (2009). Near-exact distributions for the generalized Wilks Lambda statistic: a comparative study. *Technical Report CMA 2-2009*, CMA-FCT/UNL (published in *Discussiones Mathematicae - Probability and Statistics*).
 23. Marques, F. J., Coelho, C. A. (2009). Near-exact distributions for the likelihood ratio test statistic of the multi-sample block-matrix sphericity test. *Technical Report CMA 1-2009*, CMA-FCT/UNL (published in *Applied Mathematics and Computation*).
 22. Marques, F. J., Coelho, C. A. (2008). The sphericity test for several samples – how to use the decomposition of the null hypothesis to construct near-exact approximations for the distribution of the test statistic (in Portuguese). *Technical Report CMA 7-2008*, CMA-FCT/UNL (published in *Estatística - Arte de Explicar o Acaso, Actas do XVI Congresso Anual da Sociedade Portuguesa de Estatística*).
 21. Marques, F. J., Coelho, C. A., Arnold, B. C. (2008). A general near-exact distribution theory for the most common likelihood ratio test statistics used in Multivariate Statistics. *Technical Report CMA 5-2008*, CMA-FCT/UNL (published in *TEST*).
 20. Coelho, C. A., Marques, F. J. (2007). The advantage of decomposing elaborate hypotheses on covariance matrices into conditionally independent hypotheses in building near-exact distributions for the test statistics. *Technical Report CMA 11-2007*, CMA-FCT/UNL (published in *Linear Algebra and its Applications*).
 19. Coelho, C. A., Marques, F. J. (2007). Near-exact distributions for the independence and sphericity likelihood ratio test statistics. *Technical Report CMA 10-2007*, CMA-FCT/UNL (published in *Journal of Multivariate Analysis*).
 18. Grilo, L. M., Coelho, C. A. (2007). The exact and near-exact distributions for the Wilks Lambda statistic used in the test of independence of two sets of variables. *Technical Report CMA 7-2007*, CMA-FCT/UNL

(published in *American Journal of Mathematical and Management Sciences*).

17. Coelho, C. A., Marques, F. J. (2007). Near-exact approximations for the likelihood ratio test statistic for testing equality of several variance-covariance matrices. *Technical Report CMA 6-2007*, CMA-FCT/UNL.
16. Coelho, C. A. (2007). The exact and near-exact distributions of the product of independent Beta random variables whose second parameter is rational. *Technical Report CMA 1-2007*, CMA-FCT/UNL (published in *Journal of Combinatorics, Information & System Sciences*).
15. Coelho, C. A. (2006). The wrapped Gamma distribution and wrapped sums and linear combinations of independent Gamma and Laplace distributions. *Technical Report CMA 18-2006*, CMA-FCT/UNL (published in *Journal of Statistical Theory and Practice*).
14. Coelho, C. A., Mexia, J. T. (2006). On the exact and near-exact distributions of statistics used in generalized F tests. *Technical Report CMA 17-2006*, CMA-FCT/UNL.
13. Marques, F. J., Coelho, C. A. (2006). Near-exact distributions for the sphericity likelihood ratio test statistic. *Technical Report CMA 1-2006*, CMA-FCT/UNL (published in *Journal of Statistical Planning and Inference*).
12. Grilo, L. M., Coelho, C. A. (2005). Development and comparative study of two near-exact approximations to the distribution of the product of an odd number of independent Beta random variables. *Technical Report CMA 21-2005*, CMA-FCT/UNL (published in *Journal of Statistical Planning and Inference*).
11. Coelho, C. A., Alberto, R. P., Grilo, L. M. (2005). A mixture of Generalized Integer Gamma distributions as the exact distribution of the product of an odd number of independent Beta random variables. Applications. *Technical Report CMA 20-2005*, CMA-FCT/UNL (published in *Journal of Interdisciplinary Mathematics*).
10. Alberto, R. P., Coelho, C. A. (2005). Study of the quality of several asymptotic and near-exact approximations based on moments for the distribution of the Wilks-Lambda statistic. *Technical Report CMA 19-2005*, CMA-FCT/UNL (published in *Journal of Statistical Planning and Inference*).
9. Coelho, C. A. (2005). The joint characterization of discrete and continuous "waiting times" through their reciprocal relationships. *Relatratio*

Tcnico CMA 18-2005, CMA-FCT/UNL (published in *Journal of Interdisciplinary Mathematics*)

8. Coelho, C. A., Mexia, J. T. (2005). On some generalizations of the Cox-Markov process. *Technical Report* CMA 14-2005, CMA-FCT/UNL.
7. Coelho, C. A., Alberto, R. P., Grilo, L. M. (2005). When do the moments uniquely identify a distribution. *Technical Report* CMA 13-2005, CMA-FCT/UNL.
6. Mexia, J. T., Corte-Real, P., Coelho, C. A. (2005). Distribution, limit distribution and prediction bands for the maximum claim. *Technical Report* CMA 12-2005, CMA-FCT/UNL.
5. Coelho, C. A., Mexia, J. T. (2005). On the distribution of the product and ratio of independent central and doubly non-central Generalized Gamma Ratio random variables. *Technical Report* CMA 7-2005, CMA-FCT/UNL (published in *Sankhya*)
4. Coelho, C. A. (2000). The Generalized Near-Integer Gamma distribution – a basis for the 'near-exact' and asymptotic distributions of statistics which are the product of an odd number of particular independent Beta random variables. *Technical Report #3*, Unidade de Investigao em Matemtica Aplicada/IISA – Dep. de Matemtica, ISA/UTL, 37pp. (published in *Journal of Multivariate Analysis*)
3. Coelho, C. A. (1999). Simulation results and detailed proofs on asymptotic Normal distributions for the Generalized Wilks Lambda Statistic. *Technical Report #1*, Unidade de Investigao em Matemtica Aplicada/IISA – Dep. de Matemtica, ISA/UTL, 106pp. (partially published in *Communications in Statistics*)
2. Coelho, C. A. (1996). The Exact Wilks' Lambda Distribution - an application of the Generalized Integer Gamma Distribution. *Technical Report #5*, 1996, CEAUL, Universidade de Lisboa. (published, together with Technical Report # 1, in *Journal of Multivariate Analysis*)
1. Coelho, C. A. (1996). The Generalized Integer Gamma Distribution as a Basis for Multivariate Distributions. *Technical Report #4*, 1996, CEAUL, Universidade de Lisboa. (published, together with Technical Report # 2, in *Journal of Multivariate Analysis*)

8.9 Participation in Conferences – Oral presentations (Abstracts)

-
42. Coelho, C. A. (2017). Near-Exact Distributions – Problems They Can Solve. *10Th International Statistics Congress – in celebration of the 25th Anniversary of the Turkish Statistical Association*, Ankara University, Ankara, Turkey, December 6-8, 2017 (keynote speaker).
 41. Coelho, C. A. (2017). Trimmed likelihood ratio statistics – an unexpected improvement in power. *Satellite Meeting ISI-CRA and XI WSMC – XIth Workshop on Statistics, Mathematics and Computation*, Universidade Aberta and Instituto Politecnico de Portalegre, Lisboa and Portalegre, July 10-12, 2017, Abstract Book pp.7 (invited speaker).
 40. Coelho, C. A. (2017). Likelihood Ratio Test for the Equality of Mean Vectors when the Covariance Matrices are Block-Compound Symmetric. *ASMDA 2017 – The 17th Conference of the Applied Stochastic Models and Data Analysis International Society*, De Morgan House of the London Mathematical Society, London, June 6-9, 2017, Abstract Book pp.5-6 (invited speaker).
 39. Coelho, C. A. (2017). Near-exact distributions – closer than common asymptotic distributions. *AICS – The 4th African International Conference on Statistics*, University of Limpopo, South Africa, March 20-23, 2017, Abstract Book pp.19 (keynote speaker).
 38. Coelho, C. A. (2016). Likelihood ratio test for the equality of mean vectors when the joint covariance matrix is block-circulant or block compound symmetric. *ICOSDA 2016 – International Conference on Statistical Distributions and Applications*, Niagara Falls, Canada, October 14-16, 2016, Topic-Invited Session on ‘Likelihood-based Inference: Methods and Applications’, Abstract Book pp.30 (invited speaker).
 37. Coelho, C. A. (2016). Tests for equality of mean vectors with structured covariance matrices. *Xth Workshop on Statistics, Mathematics and Computation and Vth Portuguese-Polish Workshop on Biometry*, Tomar, Portugal, May 26-28, 2016, Abstract Book pp.3 (plenary invited speaker).
 36. Coelho, C. A. (2016). Likelihood based inference methods for Statistical Disclosure Control – joint work with Professor Bimal Sinha. *10th Probability and Statistics Day – Department of Mathematics and Statistics, University of Maryland, Baltimore County, U.S.A. – in celebration of Prof. Bimal Sinha 70th birthday*, UMBC, U.S.A., May 20-21, 2016 (plenary invited speaker).
 35. Coelho, C. A. (2016). Testing block compound symmetry vs. block matrix sphericity. *Workshop in honor of Prof. Roman Zmyslony Jubilee*, Zielona Gora, Poland, March 12-13, 2016 (invited speaker).

-
34. Coelho, C. A., Roy, A. (2015). Developing near-exact distributions for likelihood ratio statistics to test for Kronecker product structures in covariance matrices. *60th World Statistics Congress of the International Statistical Institute*, Rio de Janeiro, Brazil, July 26-31, 2015 (Special Topic Session 062 ‘Statistical Modeling of Multi-level Multivariate Data using Kronecker Product Structured Covariance Matrices’ – invited speaker).
 33. Coelho, C. A. (2015). Near-exact and asymptotic distributions for likelihood ratio statistics used in tests for mean vectors with patterned covariance matrices. *9th Probability and Statistics Day – Department of Mathematics and Statistics, University of Maryland, Baltimore County, U.S.A.*, UMBC, U.S.A.; April 17-18, 2015 (plenary invited speaker).
 32. Coelho, C. A. (2015). Intuição, Realidade e a necessidade de processos slides de Análise de Dados. *JORTEC – Matemática*, FCT/UNL, Caparica, Portugal, February 9, 2015 (invited speaker).
 31. Coelho, C. A., Marques, F. J. (2014). A double decomposition of the test of independence of sets of variables that allows for a modeling view of this test. *MAMECTIS’14 – 16th International Conference on Mathematical Methods, Computational techniques and Intelligent Systems*, October 30–November 1, 2014, Lisbon, (invited speaker).
 30. Coelho, C. A., Marques, F. J., Oliveira, S. (2013). The Exact Distribution of the Likelihood Ratio Test Statistic used to Test Simultaneously the Equality of Means and Circularity of the Covariance Matrix. *ICNAAM 2013 – International Conference of Numerical Analysis and Applied Mathematics*, Rhodes, Greece, September 21-27, 2013.
 29. Coelho, C. A. (2013). Near-exact distributions – what are they and why do we need them?. *59th World Statistics Congress of the International Statistical Institute*, Hong-Kong, August 25-30, 2013 (invited speaker – Special Topic Session 084 – ‘Is Distribution Theory still relevant?’).
 28. Coelho, C. A. (2013). The likelihood ratio test for block-circularity of the covariance matrix — developing near-exact distributions for the test statistic. *7th Probability and Statistics Day – Department of Mathematics and Statistics, University of Maryland, Baltimore County, U.S.A.*, UMBC, U.S.A., 26-27 de Abril, 2013 (plenary invited speaker).
 27. Coelho, C. A., Marques, F. J. (2013). Near-exact distributions for the block equicorrelation and equivariance likelihood ratio test statistic. *ICMSS – International Conference on Mathematical Science and*

-
- Statistics*, Kuala-Lumpur, February 5-7, 2013. Abstract Book pp. 143.
26. Coelho, C. A., Arnold, B. C. (2012). On the exact and near-exact distributions of the product of generalized Gamma random variables and the generalized variance. *AISC 2012 – International Conference on Advances in Interdisciplinary Statistics and Combinatorics – A Conference of the North Carolina Chapter of the American Statistical Association*, Greensboro, U.S.A., October 5-7, 2012, Abstract Book, pp. 33.
 25. Coelho, C. A., Arnold, B. C. (2012). Instances of the product of independent Beta random variables and of the Meijer G and Fox H functions with finite representations. *ICNAAM 2012 – International Conference of Numerical Analysis and Applied Mathematics*, Kos, Greece, September 19-25, 2012.
 24. Coelho, C. A. (2012). Celebrating George P. H. Styan's 75th birthday and my meetings with him. *LINSTAT/IWMS 2012 – International Conference on Trends and Perspectives in Linear Statistical Inference and 21st International Workshop on Matrices and Statistics*, Bedlewo, Poland, July 16-20, 2012, Abstract Book, pp. 84, 197-218, 219-226 (invited speaker for the Special Session in honor of George P. H. Styan).
 23. Coelho, C. A. (2012). On the distribution of linear combinations of chi-square random variables. *LINSTAT/IWMS 2012 – International Conference on Trends and Perspectives in Linear Statistical Inference and 21st International Workshop on Matrices and Statistics*, Bedlewo, Poland, July 16-20, 2012, Abstract Book, pp. 85-86.
 22. Coelho, C. A., Arnold, B. C. (2012). Instances of the Meijer G and Fox H functions and of the distribution of the product of independent beta random variables with finite representations. *6th Workshop on Statistics, Mathematics and Computation*, Covilh, July 3-4, 2012, Abstract Book, pp. 22 (invited speaker).
 21. Coelho, C. A. (2012). Intuition, Reality, Data Analysis and Inference. *JOCLAD 2012 – XIX Jornadas de Classificacao e Anlise de Dados*, Tomar, March 28-31, 2012, Abstract Book, pp. 9-14 (invited speaker).
 20. Coelho, C. A., Marques, F. J. (2011). On the exact, asymptotic and near-exact distributions for the likelihood ratio statistics to test equality of several Exponential distributions. *ICNAAM 2011 – International Conference of Numerical Analysis and Applied Mathematics*, Rhodes, Greece, September 19-25, 2011.
 19. Coelho, C. A., Marques, F. J. (2011). The multi-sample block sphericity test — exact and near-exact distributions for its likelihood ratio

-
- test statistic. *17th European Young Statisticians Meeting*, FCT/UNL, Caparica, Portugal, September 5-9, 2011 (plenary invited speaker).
18. Coelho, C. A., Mexia, J. T. (2011). Bounds and Improved Computation for Approximate Quantiles. *5th Workshop on Statistics, Mathematics and Computation*, Faro, Portugal, July 11-12, 2011, Abstract Book, pp. 19 (plenary invited speaker).
 17. Marques, F. J., Coelho, C. A. (2010). The exact and near-exact distributions of the likelihood ratio statistic for the block sphericity test. *ICNAAM 2010 - International Conference of Numerical Analysis and Applied Mathematics*, Rhodes, Greece, September 19-25, 2010.
 16. Coelho, C. A., Mexia, J. T. (2010). The distribution of the test statistic for testing the equality of two generalized variances in the non-central linear case - An example of application of the results on the distribution of the product of independent Gamma-ratio random variables. Invited Speaker at *The 40th International Biometrical Colloquium and Second Polish-Portuguese Workshop on Biometry*, Bedlewo, August 29-September 2, 2010, Abstract Book, pp. 17 (invited speaker).
 15. Coelho, C. A., Marques, F. J. (2007). The decomposition of elaborate hypotheses on covariance matrices as a basis for building near-exact distributions for the test statistics. *International Conference on Advances in Interdisciplinary Statistics and Combinatorics (AISC'07)*, Univ. of North Carolina at Greensboro, EUA, October 12-14, 2007, Abstract Book, pp. 40.
 14. Coelho, C. A., Marques, F. J. (2007). Testing for structure in covariance matrices. *The 16th International Workshop on Matrices and Statistics (IWMS'07)*, Univ. of Windsor, June 1-3, 2007, Abstract Book, pp. 12 (invited speaker).
 13. Coelho, C. A., Marques, F. J. (2006). Near-exact approximations for the likelihood ratio test statistic for testing equality of several variance-covariance matrices. *International Conference on Interdisciplinary Mathematical & Statistical Techniques, XIII-th Conference of the Forum for Interdisciplinary Mathematics (SCRA2006)*, Tomar, Portugal, September 1-4, 2006, Abstract Book, pp. 29.
 12. Coelho, C. A. (2006). Matrix potentiation: some of its properties and applications. *15th International Workshop on Matrices and Statistics (IWMS'06)*, Upsala, Swedish University of Agricultural Sciences, June 13-17, 2006, Abstract Book, pp. 10.
 11. Coelho, C. A. (2005). Relations between the (complete) and incomplete' moment generating function and complete nad incomplete moments

-
- for distributions in the Exponential Family, *I Workshop in Statistics, Mathematics and Computation*, Universidade Aberta, Lisbon, May 5-6, 2005 (plenary invited speaker).
10. Mexia, J. T., Corte-Real, P., Coelho, C. A. (2005). Prediction bounds for maximum claims. *25th International Symposium on Forecasting (ISF'05)*, San Antonio, Texas, June 12-15, 2005, Abstract Book, pp. 132.
 9. Coelho, C. A., Alberto, R. P. and Grilo, L. M. (2003) A mixture of Generalized Integer Gamma distributions as the exact distribution of the product of an odd number of independent Beta random variables. Applications. *SCRA2003/FIM X - International Congress in Statistics, Combinatorics and Related Areas and 10th Conference of the Forum for Interdisciplinary Mathematics*, Portland, Maine, U.S.A., October 3-5, 2003, Abstract Book, pp. 44.
 8. Coelho, C. A. (2003) On the mutual characterization of discrete and continuous 'waiting times'. *SCRA2003/ FIM X - International Congress in Statistics, Combinatorics and Related Areas and 10th Conference of the Forum for Interdisciplinary Mathematics*, Portland, Maine, U.S.A., October 3-5, 2003, Abstract Book, pp. 44-45.
 7. Coelho, C. A., SenGupta, A., Alberto, R. P. (2000) New near-exact and asymptotic distributions for some optimal likelihood ratio test statistics in multivariate populations, *Fourth International Triennial Calcutta Symposium on Probability and Statistics*, Dep. of Statistics, Calcutta University, Calcutta, Dec. 26-28, 2000, Abstract Book, pp. 9-10.
 6. Coelho, C. A., SenGupta, A. e Alberto, R. P. (2000) Near-exact and new asymptotic distributions for some Bahadur-optimal likelihood ratio test statistics in multivariate Normal populations, *International Conference on Statistics, Combinatorics and Related Areas and Seventh International Conference of the Forum for Interdisciplinary Mathematics*, Indian Institute of Technology, Bombay, Dec. 19-21, 2000, Abstract Book, pp. 26.
 5. Coelho, C. A. (2000) Numerical approximations for ratios of Gamma functions with applications in Statistics, *The Ninth International Colloquium on Numerical Analysis and Computer Science with Applications*, Plovdiv Tech. Inst., Plovdiv, August 12-17, 2000, Abstract Book, pp. 36 (invited speaker).
 4. Coelho, C. A. (2000) A Bivariate Generalized Integer Gamma Distribution - On Estimation and Regression Modeling Issues, *The XXth*

International Biometric Conference (IBC2000), Univ. of California at Berkeley, Berkeley, July 1-7, 2000, Abstract Book, pp.150.

3. Coelho, C. A. (1999) The Generalized Integer Gamma distribution as an asymptotic replacement for a logBeta distribution. Applications, *Sixth International Conference on Statistics, Combinatorics and Related Areas*, Forum for Interdisciplinary Mathematics, Univ. of South Alabama, Dec. 18-20, 1999, Alabama, USA, Abstract Book, pp.35.
2. Coelho, C. A. (1987) The Singular Value decomposition of a matrix in Factorial Data Analysis Methods (in Portuguese), *XII Jornadas Luso-Espanholas de Matemática*, Braga, May 4-8, 1987, Abstract Book, pp.11.
1. Coelho, C. A. (1986) A metafunction for Data Analysis (ANACANOMII), *1986 Decus Europe Symposium*, Hamburg, Sept. 22-26, 1986, Abstract Book, pp.50.

9. Participation in Research Projects

- PTDC/AGR-AAM/71649/2006 – ‘Drought Risk Management: Identification, Monitoring, Characterization, Prediction and Mitigation’ (1/May/2007-30/Nov/2010), whose Principal Investigator was Prof. Luís Santos Pereira from Instituto Superior de Agronomia (ISA/UTL).
- PPCDT/CLI/60006/2004 and POCI/CLI/60006/2004 – ‘Linking Water and Carbon cycles in Eucalyptus plantations’ (1/Oct/2005-31/Dec/2006–1/Jan/2007-30/Jun/2009), whose Principal Investigator was Dr. Abel Martins Rodrigues from Instituto Nacional de Recursos Biológicos, I.P. (INRB/MADRP)
- Research Project ‘SEDEMED II - Drought and Desertification in the Mediterranean Basin, II’ (1/Set/2004–30/Sep/2006), part of the European Union community program INTERREG III B MEDOC (Transnational Cooperation) and whose Representative Researcher in Portugal was Prof. Luís Santos Pereira from Instituto Superior de Agronomia (ISA/UTL) (Total funding: 2.835.500 Euros – ISA: 110.000 Euros).
- Research Project ‘SEDEMED I - Drought and Desertification in the Mediterranean Basin, I’ (1/Jan/2003-30/Sep/2004), part of the European Union community program INTERREG III B MEDOC (Transnational Cooperation) and whose Representative Researcher in Portugal was Prof. Luís Santos Pereira from Instituto Superior de Agronomia (ISA/UTL) (Total Funding: 3.219.000 Euros – ISA: 110.000 Euros).

-
- AGRO 508 – 'Composting and valorization of food industry residues as an organic fertiliser on organic farming' (1/Jan/2004-31/Dec/2007), whose Principal Investigator was Prof. Ana Cristina Queda from Instituto Superior de Agronomia (ISA/UTL) (Total Funding: 213.600 Euros, IFADAP).
 - AGRO 287 – 'Field evaluation of the effects of virus elimination in Portuguese apple and pear varieties and supply of virus-free propagative material' (2001-2004), whose Principal Investigator was Prof. Maria Teresa Barros from Instituto Superior de Agronomia (ISA/UTL).
 - AGRO 060 – 'Dormancy control techniques for crop regularization in pear, apple and plum' (2001-2004), whose Principal Investigator was Prof. Nuno Barba from Escola Sup. Agrária de Santarém.
 - PAMAF 8150 – 'Quantitative methods, validation and sampling strategies for the analysis of the dynamics of crop land occupation in Continental Portugal' (1997-2000), whose Principal Investigator was Prof. António St.Aubyn from Instituto Superior de Agronomia (ISA/UTL).
 - PAMAF 8038 – 'Analysis of the hydrological and nutritional balances and growth modelling in *Eucalyptus* stands' (1997-1999), whose Principal Investigator was Prof. Carlos Arruda Pacheco from Instituto Superior de Agronomia (ISA/UTL).
 - PAMAF 6073 – 'Micropropagation of "Rocha" pear and "Bravo de Esmolfe" apple aiming at the large scale multiplication of promising clones and genetic improvement' (1997-2000), whose Principal Investigator was Prof. Maria Teresa Barros from Instituto Superior de Agronomia (ISA/UTL).
 - PRAXIS 3/3.2/Flor/2130/95 – 'The Forest-Ambient interaction in ecosystems subject to natural and/or human perturbations in the Atlantic-Mediterranean transition region' (1997-2000), whose Principal Investigator was Prof. Celeste Coelho from Universidade de Aveiro.
 - PAMAF 2018 – 'Relaunching apple production to conquer the national market' (1995-1999), whose Principal Investigator was Prof. João Matos Silva from Instituto Superior de Agronomia (ISA/UTL).
 - PAMAF 2017 – '"Rocha" Pear: clonal selection and crop regulation for a sustained exportation' (1995-1999), whose Principal Investigator

was Prof. João Matos Silva from Instituto Superior de Agronomia (ISA/UTL).

- INIC 25 274 – 'Dormancy and fructification regularity in fruit trees' (1981-1984), whose Principal Investigator was Prof. António St.Aubyn from Instituto Superior de Agronomia (ISA/UTL).
- JNICT 521.83.42 – 'Technology of fruit production' (1983-1986), whose Principapl Investigator was Prof. João Matos Silva from Instituto Superior de Agronomia (ISA/UTL).

10. Editorial, revision and other activities

10.1 Participation in the Editorial Board of Scientific Journals

- Associate Editor, since January 2017, of *Journal of Applied Statistics*, published by Taylor & Francis and whose Editor-in-chief is Professor Jie Chen from Augusta University, U.S.A. (ISSN: 1645-6726), (among others indexed in: ISI-Web of Science, Scopus, Scimago, Mathematical Reviews, Zentralblatt für Mathematic, Current Index to Statistics) (<http://www.tandfonline.com/loi/cjas20>)
- Associate Editor, since January 2017, of *REVSTAT-Statistical Journal*, published by Statistics Portugal – Instituto Nacionl de Estatística and whose Editor-in-chief is Professor M. Ivette Gomes from the University of Lisbon, Portugal (ISSN: 1645-6726), (indexed in: Science Citation Index Expanded, Scimago, Mathematical Reviews, Zentralblatt für Mathematic, Current Index to Statistics) (<http://www.ine.pt/revstat/inicio.html>)
- Associate Editor, since 2007, of *Journal of Statistical Theory and Practice*, published by Taylor & Francis and whose Editor-in-chief is Professor Sat Gupta from University of North Carolina, U.S.A. (ISSN: 1559-8608 (Print), 1559-8616 (Online)) (<http://www.tandfonline.com/loi/ujsp20>)
- Associate Editor, since 2003, of *Journal of Interdisciplinary Mathematics*, published by Taylor & Francis and whose Editor-in-chief is Professor Bal Kishan Dass from the University of Delhi (ISSN: 0972-0502 (Print), 2169-012X (Online)) (<http://www.tandfonline.com/loi/tjim20>)
- Associate Editor, since 2005, of the *American Journal of Mathematical and Management Sciences*, a core journal of the Current Index to Statistics, published by Taylor & Francis and whose Editor-in-Chief

is Professor Madhuri Mulekar from the University of South Alabama,
U.S.A. (ISSN: 0196-6324 (Print), 2325-8454 (Online))
(<http://www.tandfonline.com/loi/umms20>)

- Member of the Editorial Board, since 2006, of *Discussiones Mathematicae – Probability and Statistics*, whose Editor-in-chief is Professor Roman Zmyslony from University of Zielona Gora, Poland (ISSN: 1509-9423 (Print), 2084-0381 (Online)) (<http://www.discuss.wmie.uz.zgora.pl/ps>)

10.2 Activities as Guest Editor of special issues of Scientific Journals

- Guest Editor, together with Thomas Mathew and Nitis Mukhopadhyay, of the future Special Issue on Contributions to Statistical Planning & Inference, in honor of Professors Bimal and Bikas Sinha, of the *Journal of Statistical Theory and Practice*, scheduled to appear in 2017.
- Guest Editor, together with Filipe J. Marques, of the Special Issue on Distribution Theory, Estimation and Inference, Vol. 15, # 2 (2017), of *REVSTAT*, in honor of Professors Bimal and Bikas Sinha 70th birthday.
- Guest Editor, together with Filipe J. Marques and Miguel Fonseca, of the future Special Issue in honor of Prof. Roman Zmyslony 70th birthday, Vol. 37, # 1-2 (2017), of *Discussiones Mathematicae – Probability and Statistics*, scheduled to appear in June/July 2017. (<http://www.discuss.wmie.uz.zgora.pl/ps/>)
- Guest Editor, together with Filipe J. Marques and Barry C. Arnold, of the Special Issue on Distribution Theory, Estimation and Inference, # 1, Vol. 9 (2015), of the *Journal of Statistical Theory and Practice*. (<http://www.tandfonline.com/toc/ujs20/9/1>)
- Guest Editor, together with Simo Puntanen of # 1-2, Vol. 33 (2013) of *Discussiones Mathematicae - Probability and Statistics*, in honor of George P. H. Styan. (<http://www.discuss.wmie.uz.zgora.pl/ps/>)
- Guest Editor, together with Filipe Marques and Marco Reis of n.º 1 of Vol. 11 (2013) of *REVSTAT*. (<https://www.ine.pt/revstat/tables.html>)
- Guest Editor, together with Prof. Dinis Pestana of n.º 1 of Vol. 30 (2010) of *Discussiones Mathematicae – Probability and Statistics*. (<http://www.discuss.wmie.uz.zgora.pl/ps/>)
- Guest Editor, together with Prof. Dinis Pestana of n.º 2 of Vol. 29 (2009) of *Discussiones Mathematicae – Probability and Statistics*. (<http://www.discuss.wmie.uz.zgora.pl/ps/>)
- Guest Editor, together with Prof. Manohar Aggarwall of n.ºs 3-4 of Vol. 1 of *Journal of Statistical Theory and Practice*, “special issue on Design and Analysis of Experiments”.

10.3 Activities as Referee and Reviewer

- Reviewer for the South African National Research Foundation (NRF) of a proposal under the Competitive Programme for Rated Researchers – January 2016.

- Referee for the special issue of the *Journal of Statistical Theory and Practice* (# 4, Vol.4) in honor of H. C. Gupta, guest-edited by C. R. Rao.
- Referee for *Journal of Multivariate Analysis*.
- Referee for *Journal of Statistical Computation and Simulation*.
- Reviewer 64177 of Mathematical Reviews.
- Referee for the Proceedings Volumes of the V-th, VI-th and VIII-th 'Congressos Anuais da Sociedade Portuguesa de Estatística'.

10.4 Activities as Organizer of Sessions in Scientific Meetings and as member of Organizing and Scientific Committees

Member of the Scientific Committee of the 10th International Statistics Congress in celebration of the 25th Anniversary of the Turkish Statistical Association – Ankara University, December 6-8, 2018, Ankara, Turkey.

Member of the International Organizing Committee of the IASSL (Institute of Applied Statistics - Sri Lanka) International Conference 2017, Sri Lanka, 28-29 Dec., 2017.

Organizer of the Special Topics Session on “Statistical Disclosure Control – Methods and Applications” for the 61st World Statistics Congress – Marrakesh, 2017.

Member of the Scientific Committee of the XIth Workshop on Statistics, Mathematics and Computation, held at Faculdade de Ciências of Universidade de Lisboa and Instituto Politécnico de Portalegre on July 10-12, 2017.

Member of the Scientific Program Committee of the 2nd International Conference on Statistical Distributions and Applications, October 14-16, 2016.

Organizer and Chair of the Special Invited Session “Likelihood-based Inference: Methods and Applications” at the upcoming 2nd International Conference on Statistical Distributions and Applications, October 14-16, 2016.

Member of the Scientific Committee of the Xth Workshop on Statistics, Mathematics and Computation, and Vth Portuguese-Polish Workshop on Biometry which took place at Instituto Politécnico de Tomar on May 26-28, 2016.

-
- Organizer and Chair of the Special Topics Session "Distribution Theory – still important of course!" at the 60th World Statistics Congress held in July 2015 at Rio de Janeiro.
- Co-organizer of the "5th Symposium on Distribution Theory, Estimation and Inference" as part of the International Conference of Numerical Analysis and Applied Mathematics 2015.
- Organizer and Chair of the 4th, 3rd, 2nd and 1st Symposiums on "Distribution Theory, Estimation and Inference" as part of the International Conferences on Numerical Analysis and Applied Mathematics 2014, 2013, 2012 and 2011.
- Organizer and Chair of the Symposium on "Inference and Estimation in Mixed Linear Models" as part of the International Conferences on Numerical Analysis and Applied Mathematics 2010.
- Member of the Organizing Committee of 'Jornada da Matemática' at the Mathematics Department of FCT/UNL which took place on March 4, 2011.
- Member of the Scientific Committee of the *7th Workshop on Statistics, Mathematics and Computation* of Universidade Aberta, May 28-29, 2013, Tomar, Portugal.
- Member of the Scientific Committee of the *5th Scientific Meeting ISLA – Data Mining and Business Intelligence Methods and Applications*, November 11-13, 2010, ISLA, Santarém, Portugal.
- Member of the Scientific Committee of the *4th Workshop on Statistics, Mathematics and Computation* of Universidade Aberta, November 9-10, 2009, Calouste Gulbenkian Foundation, Lisbon.
- Co-chair of the Local Organizing Committee of the *IWMS'08 – 17th International Workshop on Matrices and Statistics*, in honor of Professor T. W. Anderson 90th birthday, July 23–26, 2008, Tomar, Portugal.
- Member of the FIM's (Forum for Interdisciplinary Mathematics) Organizing Committee of the *International Conference on Interdisciplinary Mathematical & Statistical Techniques, XVI-th Conference of the Forum for Interdisciplinary Mathematics (IMST'2008/FIM XVI)* held May 16-18, 2008, at the University of Memphis, Tennessee, U.S.A.
- Member of the Scientific Committee of the *3rd Workshop on Statistics, Mathematics and Computation and 1st Portuguese-Polish Workshop on Biometry* of Universidade Aberta, July 21-22, 2008, Lisbon.

Member of the Scientific Committee (International Advisory Committee) of the International Conference on Advances in Interdisciplinary Statistics and Combinatorics, held October 12-14, 2007, at the University of North Carolina at Greensboro, U.S.A.

Member of the Scientific Committee of the *II Workshop on Statistics, Mathematics and Computation* at Universidade Aberta, November 8-9, 2006.

President of the Local Organizing Committee of SCRA 2006/FIM XIII (Thirteenth International Conference on Interdisciplinary Mathematical and Statistical Techniques) held September 1-4, 2006, at the Tomar Polytechnic Institute, in a joint organization of the Tomar Polytechnic Institute and Universidade Nova de Lisboa, where it was awarded the 'Honoris Causa' Degree to Professor C. R. Rao.

Member of the Scientific Committee (International Advisory Committee) of SCRA 2004/FIM XI (Eleventh International Conference on Interdisciplinary Mathematical and Statistical Techniques) held December 27-29, 2004, at the Institute of Engineering and Technology of Lucknow, India.

Member of the Scientific Committee (International Advisory Committee) of SCRA 2003/FIM X (International Conference on Statistics, Combinatorics and Related Areas, 10th Conference of the Forum for Interdisciplinary Mathematics) held October 3-5, 2003, at the University of Southern Maine, Portland, Maine, U.S.A.

Member of the International Organizing Committee of the 'International Conference on Statistics, Combinatorics and Related Areas' and 'VII International Conference of the Forum for Interdisciplinary Mathematics', held December 19-21, 2000 at the Indian Institute of Technology of Bombaim, India.

Member of the Organizing Committee of the VIII-th 'Congresso Anual da Sociedade Portuguesa de Estatística', held October 4-7, 2000.

10.5 Other activities

- Member of the Board of Fulbrighters Portugal (Portuguese Association of Fulbrighters and Fulbright Alumni)
- Speaker at the *Honoris Causa* Doctorate Degree Ceremony for Professor C. R. Rao, awarded by Universidade Nova de Lisboa

- Portuguese delegate to the 14th General Assembly of the International Mathematical Union held in Shanghai, August 17-18, 2002, representing the Portuguese National Commission for Mathematics and the Portuguese ICCTI (Instituto para a Cooperação Científica e Tecnológica Internacional).
- Translator of Eurodicautom - European Dictionary in Statistics (<http://europa.eu.int/eurodicautom/Controller>).
- Coordinator of an Advanced Course in Statistics for the Technical Staff at the Statistics Division of the Portuguese Ministry for Agriculture, held at ISA/UTL, September-November 1996.



(Carlos Agra Coelho)

July 18, 2018