

CURRICULUM VITAE

5 November 2019

PERSONAL DETAILS

Full name: María Dolores Martínez-Miranda

Date of birth: 17 November 1971

Address: Departamento de Estadística e Investigación Operativa
Facultad de Ciencias, Universidad de Granada
Campus Fuentenueva s/n, 18071 Granada (Spain)
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PROFESSIONAL EDUCATION AND EXPERIENCE

1989-1994 “Licenciatura” (BSc+MSc) in Mathematical Sciences with award “Premio Extraordinario de Licenciatura” by the University of Granada. Date of award: 23/08/1994.

1996-2000 PhD. in Mathematics. Dissertation “Elección de los parámetros que intervienen en un modelo de regresión local” (*The choice of the parameters involved in a local linear regression model*) supervised by Professor Andrés González Carmona. University of Granada, Spain. Date of award: 31/10/2000.

FACULTY POSITIONS

Associate Professor in Statistics, University of Granada (23 April 2004 to date). Permanent position (full time).

Reader in Statistics, Cass Business School, City University of London (1 September 2016 to 31 August 2017).

Honorary Senior Visiting Fellow, Cass Business School, City University London, UK (27 May 2015 to 31 August 2016, 1 June 2018 to 31 May 2021).

Senior Research Fellow. Faculty of Actuarial Science and Insurance. Cass Business School. City University London (1 September 2012 to 31 August 2014).

Assistant Professor in Statistics, University of Granada (1 October 1994 to 23 April 2004).

INTERNATIONAL VISITING APPOINTMENTS

Institut für Statistik und Ökonometrie, Georg-August-Universität Göttingen, Germany (October, 2006; December, 2007; July, 2008)

School of Law&Economics. University of Mannheim, Germany (July 2008, February 2012, January 2013, April 2014)

Nuffield College, University of Oxford (November 2009, December 2011, February 2013, January 2014)

Cass Business School, City University London (May 2010, September 2012-August 2014)

Insurance Company RSA, Copenhagen (DK) and Horsham (UK) (August 2009, 2010, 2011, 2012)

CURRENT RESEARCH AREAS

- Non-parametric inference (regression, density and hazard estimation, bandwidth selection, structured models)

- Stochastic claims reserving based on mathematical statistics
- Mixed-effects models
- Bootstrap methods
- Computational statistics

SELECTED TEACHING EXPERIENCE

Undergraduate degree in Mathematics (Spain)

Modules: Computational Statistics, Mathematical Statistics and Probability

Undergraduate degree in Statistics (Spain)

Modules: Computational Statistics, Survey Sampling, Linear Models, Regression Analysis, Categorical data analysis

Undergraduate degrees in Geology, Biology and Labour Sciences (Spain)

Modules: Statistics, Applied Multivariate Analysis (Spain)

Undergraduate degree in Nursing

Modules: Biostatistics (Spain)

PhD in Statistics and Master in Applied Statistics (Spain)

Modules: Computational Statistics

Master course of Public Statistics

Modules: Computational Statistics, Survey Sampling.

Master course of Actuarial Science (UK)

Modules: Probability and Statistics, Modelling and Data Analysis

Undergraduate degree in Mathematical Science (UK)

Module: Applications of Probability and Statistics

SELECTION OF RELEVANT PUBLICATIONS

Papers published in peer-reviewed journals indexed in JCR

1. Borrajo-García, M.I., Martínez-Miranda, M.D. and González-Manteiga, W. (2019). "Bootstrapping kernel intensity estimation for inhomogeneous point processes with spatial covariates". **Computational Statistics & Data Analysis**. In press <https://doi.org/10.1016/j.csda.2019.106875>. Impact Factor: 1.323 (2018). Category: Statistics & Probability, ranking 48/123.
2. Borrajo-García, M.I., Martínez-Miranda, M.D. and González-Manteiga, W. (2019). "Testing for significant differences between two spatial patterns using covariates". **Spatial Statistics**. In press <https://doi.org/10.1016/j.spasta.2019.100379>. Impact Factor: 1.219 (2018). Category: Statistics & Probability, ranking 54/123.
3. Gámiz, M.L., Martínez-Miranda, M.D. and Nielsen, J.P. (2019). "Multiplicative local linear hazard estimation and best one-sided cross-validation". **Journal of Machine Learning Research**, 20, 1-19. Impact factor: 4.091 (2018). Category: Computer Science, Artificial Intelligence, ranking 27/133.
4. Gámiz, M.L., López-Montoya, A., Martínez-Miranda, M.D. and Raya-Miranda, R. (2019). "Data visualization for reliability analysis of repairable systems". **Quality and Reliability Engineering International** 35, 99-115. Impact Factor: 1.409 (2018). Category: Operations Research & Management Science, ranking 51/84.
5. Gámiz, M.L., Martínez-Miranda, M.D. and Raya-Miranda, R. (2018). "Graphical goodness-of-fit test for mortality models". **Mathematical Population Studies** 25, 123-142. Impact Factor: 0.269 (2017). Category: Statistics & Probability, ranking 122/123.

6. Borrajo-García, M.I., Martínez-Miranda, M.D. and González-Manteiga, W. (2017). "Bandwidth selection for kernel density estimation with length-biased data". **Journal of Nonparametric Statistics** 29(3), 636-668. Impact Factor: 0.630 (2017). Category: Statistics & Probability, ranking 102/123.
7. Hiabu, M., Mammen, E., Martínez-Miranda, M.D. and Nielsen, J.P. (2016). "In sample forecasting with local linear survival densities". **Biometrika** 103 (4), 843-859. Impact Factor: 1.448 (2016). Category: Statistics & Probability, ranking 38/124.
8. Martínez-Miranda, M.D., Nielsen, B. and Nielsen, J.P. (2016). "A simple benchmark for mesothelioma projection for Great Britain". **Occupational and Environmental Medicine** 73, 561-563. Impact Factor: 3.912 (2016). Category: Public, Environmental & Occupational Health, ranking 23/176.
9. Gámiz, M.L., Mammen, E., Martínez-Miranda, M.D. and Nielsen, J.P. (2016) "Double one-sided cross-validation of local linear kernel hazards". **Journal of the Royal Statistical Society Series B** 78 (4), 755-779. Impact Factor: 4.610 (2016). Category: Statistics & Probability, ranking 2/124.
10. González-Manteiga, W., Martínez-Miranda, M.D. and Van Keilegom, I. (2016) "Goodness-of-fit Test in Parametric Mixed-Effects Models based on the Estimation of the Error Distribution". **Biometrika** 103(1), 133-146. Impact Factor: 1.448 (2016). Category: Statistics & Probability, ranking 38/124.
11. Hiabu, M., Margraf, C., Martínez-Miranda, M.D. and Nielsen, J.P. (2016) "Cash flow generalisations of non-life insurance expert systems estimating outstanding liabilities". To appear in **Expert Systems with Applications** 45, 400-409. Impact Factor: 3.928 (2016) Category: Operations Research & Management Science, ranking 3/83.
12. López-Montoya, A., Gámiz, M.L. and Martínez-Miranda, M.D. (2015) "Local Linear Smoothing of Reliability Data under an Accelerated Failure Time Model". **Applied Mathematical Modelling** 39(16), 4630-4645. Impact Factor: 2.291 (2015). Category: Mathematics, Interdisciplinary Applications, ranking 13/101.
13. Martínez-Miranda, M.D., Nielsen, B. and Nielsen, J.P. (2015) "Inference and forecasting in the age-period-cohort model with unknown exposure with an application to mesothelioma mortality". **Journal of the Royal Statistical Society Series A** 178, 29-55. Impact Factor: 1.702 (2015). Category: Statistics & Probability, ranking 24/123.
14. Mammen, E., Martínez-Miranda, M.D. and Nielsen, J.P. (2015) "In-sample forecasting applied to reserving and mesothelioma". **Insurance: Mathematics and Economics** 61, 76-86. Impact factor: 1.378 (2015). Category: Statistics & Probability, ranking 36/123.
15. Martínez-Miranda, M.D., Nielsen, J.P., Verrall, R. and Wüthrich, M.V. (2015). "Double Chain Ladder, Claims Development Inflation and Zero Claims", **Scandinavian Actuarial Journal** 2015(5), 383-405. Impact Factor: 1.596 (2015). Category: Statistics & Probability, ranking 27/123.
16. Mammen, E., Martínez-Miranda, M.D., Nielsen, J.P. and Sperlich, S. (2014) "Further theoretical and practical insight to the do-validated bandwidth selector". **Journal of the Korean Statistical Society** 43, 355-365. Impact Factor: 0.440 (2014). Category: Statistics & Probability, ranking 109/122.
17. Gámiz, M.L., Janys, L., Martínez-Miranda, M.D. and Nielsen, J.P. (2013) "Bandwidth selection in marker dependent kernel hazard estimation". **Computational Statistics and Data Analysis** 68, 155-169. Impact Factor: 1.151 (2013). Category: Statistics & Probability, ranking 43/119.
18. Martínez-Miranda, M.D., Nielsen, J.P., Sperlich, S. and Verrall, R. (2013) "Continuous Chain Ladder: Reformulating and generalizing a classical insurance problem". **Expert Systems with Applications**, 40(14), 5588–5603. Impact Factor: 1.965 (2013). Category: Operations Research & Management Science, ranking 16/79.

19. Gámiz, M.L., Martínez-Miranda, M.D. and Nielsen, J.P. (2013) "Smoothing survival densities in practice". **Computational Statistics and Data Analysis** 58, 368–382. Impact Factor: 1.151 (2013). Category: Statistics & Probability, ranking 43/119.
20. González-Manteiga, W., Lombardía-Cortiña, M.J., Martínez-Miranda, M.D. and Sperlich, S. (2013) "Kernel Smoothers and Bootstrapping for Semiparametric Mixed Effects Models". **Journal of Multivariate Analysis** 114, 288-302. Impact Factor: 0.943 (2013): Category: Statistics & Probability, ranking 58/119.
21. Martínez-Miranda, M.D., Nielsen, J.P. and Wüthrich, M.V. (2012) "Statistical modelling and forecasting in Non-life insurance". **SORT-Statistics and Operations Research Transactions** 36 (2) July-December 2012, 195-218. Impact Factor (2012): 0.462. Category: Statistics & Probability, ranking: 98/117.
22. Martínez-Miranda, M.D., Nielsen, J.P. and Verrall, R. (2012) "Double Chain Ladder". **Astin Bulletin**, 42/1, 59-76. Impact Factor (2012): 0.698. Category: Statistics & Probability, ranking: 75/117.
23. Raya-Miranda, R. and Martínez-Miranda, M.D. (2011) "Data-driven local bandwidth selection for additive models with missing data". **Applied Mathematics and Computation**, 217 (24), 10328-10342. Impact Factor (2011): 1.317. Category: Applied Mathematics, ranking: 44/245.
24. Mammen, E., Martínez-Miranda, M.D., Nielsen, J.P. and Sperlich, S. (2011) "Do-validation for Kernel Density Estimation". **Journal of the American Statistical Association-Theory and Methods**, 106 (494), 651-660. Impact factor (2011): 1.992. Category: Statistics & Probability, ranking: 11 / 116.
25. Martínez-Miranda, M.D., Nielsen, B., Nielsen, J.P. and Verrall, R. (2011) "Cash flow simulation for a model of outstanding liabilities based on claim amounts and claim numbers". **Astin Bulletin**, 41(1), 107–129. Category: Statistics & Probability. Impact Factor (2011): 0.486. Ranking: 90 / 116.
26. Gámiz, M.L. and Martínez-Miranda, M.D. (2010) "Regression analysis of the structure function for reliability evaluation of continuous-state system", **Reliability Engineering and System Safety**, 95, 134-142. Impact factor (2010): 1.908. Category: Operations Research & Management Science, ranking: 16 / 74.
27. González-Manteiga, W., Martínez-Miranda, M.D. and Raya-Miranda, R. (2008) "SiZer Map for inference with additive models", **Statistics and Computing**, 18, 297-312. Impact factor (2008): 1.371. Category: Statistics & Probability, ranking: 28 / 92.
28. Martínez-Miranda, M.D., Raya Miranda, R., González-Manteiga, W. and González Carmona, A. (2008) "A bootstrap local bandwidth selector for additive models", **Journal of Computational and Graphical Statistics**, 17, 38-55. Impact factor (2008): 1.505. Category: Statistics & Probability, ranking: 22 / 92.
29. Martínez-Miranda, M.D., Rueda García, M. and Arcos Cebrián, A. (2007) "Looking for optimal auxiliary variables in sample survey quantile estimation", **Statistics**, 41 (3), 241-253. Impact factor (2007): 0.289. Category: Statistics & Probability, ranking: 79 / 91.
30. Sánchez Borrego, I., Martínez-Miranda, M.D., González Carmona, A. (2006) "Local linear kernel estimation of the discontinuous regression function", **Computational Statistics**, 21(3-4), 557-569. Impact factor (2006): 0.208. Category: Statistics & Probability, ranking: 79 / 83.
31. Arcos Cebrián, A., Rueda García, M., Martínez-Miranda, M.D., González Aguilera, S. and Román Montoya, Y. (2005) "Incorporating the auxiliary information available in variance estimation", **Applied Mathematics and Computation**, 160 (2), 387-399. Impact factor (2005): 0.688. Category: Mathematics, Applied, ranking: 63 / 151.
32. Arcos Cebrián, A., Rueda García, M., Martínez-Miranda, M.D. (2005) "Using multiparametric auxiliary information at the estimation stage", **Statistical Papers**, 46 (3), 339-358. Impact factor (2005): 0.311. Category: Statistics & Probability, ranking: 65 / 81.

33. Martínez-Miranda, M.D., Rueda García, M., Arcos Cebrián, A., Román Montoya, Y. and González Aguilera, S. (2005) "Quantile estimation under successive sampling", **Computational Statistics**, 20 (3), 385-399. Impact factor (2005): 0.286. Category: Statistics & Probability, ranking: 69 / 81.
34. Rueda García, M., Arcos Cebrián, A., González Aguilera, S., Martínez-Miranda, M.D., Román Montoya, Y. and Martínez Puertas, S. (2005) "Ratio methods to the mean estimation with known quantiles", **Applied Mathematics and Computation**, 170 (2), 1031-1044. Impact factor (2005): 0.688. Category: Mathematics, Applied, ranking: 63 / 151.
35. Rueda García, M., and Arcos Cebrián, A., Martínez-Miranda, M.D. and Román Montoya, Y. (2004) "Some improved estimators of finite population quantile using auxiliary information in sample surveys", **Computational statistics and data analysis**, 45 (4), 825-848. Impact factor (2004): 1.022. Category: Statistics & Probability, ranking: 23 / 77.
36. González Manteiga, W., Martínez-Miranda, M.D. and Pérez González, A. (2004) "The choice of smoothing parameter in nonparametric regression through wild bootstrap", **Computational statistics and data analysis**, 47, 487-515. Impact factor (2004): 1.022. Category: Statistics & Probability, ranking: 23 / 77.
37. Rueda García, M., Arcos Cebrián, A. and Martínez-Miranda, M.D. (2003) "Difference estimators of quantiles in finite populations", **Test**, 12 (2), 481-496. Impact factor (2003): 0.591. Category: Statistics & Probability, ranking: 39 / 75.

Other published papers

- Hiabu, M., Margraf, C., Martínez-Miranda, M.D. and Nielsen, J.P. (2016) "The Link Between Classical Reserving and Granular Reserving Through Double Chain Ladder and its Extensions". **British Actuarial Journal** 21(1), 97-116. [Peer-reviewed].
- Hiabu, M., Martínez-Miranda, M.D., Nielsen, J.P., Spreeuw, J., Tanggaard, C. and Villegas, A. (2015). "Global Polynomial Kernel Hazard Estimation". **Revista Colombiana de Estadística** 38(1), 399-411. Impact Factor: 0.179 (2013). Category: Statistics & Probability, ranking 119/119.
- Agbeko, T., Hiabu, M., Martínez-Miranda, M.D., Nielsen, J.P. and Verrall, R. (2014) "Validating the Double Chain Ladder Stochastic Claims Reserving Model", **Variance** 8(2), 138-160. [Peer-reviewed].
- Martínez-Miranda, M.D., Nielsen, J.P. and Verrall, R. (2013) "Double Chain Ladder and Bornhuetter-Ferguson". **North American Actuarial Journal**, 17(2), 1-13. Impact factor (SJR 2013): 1.127.
- Martínez-Miranda M.D., Thomas, M. (2013) "Don't throw baby out with the bath water". **The Actuary -The magazine of the actuarial**.
- Rueda García, M., Martínez-Miranda, M.D. and Arcos Cebrián (2005/06) "Bootstrap confidence intervals for finite population quantiles in the presence of auxiliary information", **Model Assisted Statistics and Applications** 1 (4), 279-290 [Peer-reviewed].
- Arcos Cebrián, A., Rueda García, M., Martínez-Miranda, M.D. and González Aguilera, S. (2002) "Intervalos de confianza alternativos para los cuantiles de una población finita", **Estadística Española** (ISSN: 0014-1151), 44, 69-88[Peer-reviewed].
- Rueda García, M., Arcos Cebrián, A., Martínez-Miranda, M.D. and González Aguilera, S. (2002) "Estimadores indirectos de la varianza en muestreo de poblaciones finitas", **Estadística Española** (ISSN: 0014-1151), 44, 337-350[Peer-reviewed].

Chapter of books

- Martínez-Miranda, M.D., Nielsen, J.P. and Sperlich, S. (2009) "One Sided Cross Validation for Density Estimation", **Operational Risk Towards Basel III: Best Practices and Issues in Modeling**,

Management and Regulation, ed. G.N.Gregoriou; John Wiley and Sons, Hoboken, New Jersey, 177-196.

DEVELOPED FREE SOFTWARE

- **DCL package for R** (version 0.1.0, 2013-10-25): Claims Reserving under the Double Chain Ladder Model.
Authors: Martínez-Miranda, M.D., Nielsen, J.P. and Verrall, R.
Maintainer: Martínez-Miranda, M.D.
- **DOvalidation package for R** (version 1.1.0, 2017-10-20): Kernel Hazard Estimation with Best One-Sided and Double One-Sided Cross-Validation.
Authors: Gámiz, M.L., Mammen, E., Martínez-Miranda, M.D. and Nielsen, J.P.
Maintainer: Martínez-Miranda, M.D.

PHD SUPERVISION

- María Isabel Borrajo García
PhD in Statistics at the University of Santiago de Compostela (Spain)
Completed (February 2018). Joint supervision with Prof. Wenceslao González Manteiga.
- Antonio López Montoya
PhD in Mathematics and Statistics at the University of Granada (Spain)
PhD dissertation: "Aportaciones en el Análisis de Fiabilidad mediante técnicas no paramétricas"
Completed (April 2017). Joint supervision with Dr. María Luz Gámiz.
- Rocío Raya Miranda
PhD in Statistics at the University of Granada (Spain)
PhD dissertation: "Contributions in nonparametric additive regression"
Completed (March 2003). Joint supervision with Prof. Andrés González Carmona.

EDITORIAL BOARDS AND REFEREEING FOR JOURNALS

- Referee for: *Computational Statistics and Data Analysis; Test; Journal of Nonparametric Statistics; Statistics & Probability Letters; Computational Statistics; Variance; Journal of Computational and Graphical Statistics; Astin Bulletin; Econometrics, Reliability Engineering & System Safety; Operations Research; European Actuarial Journal; International Journal of Computer Mathematics; Journal of Zhejiang University-science; Model Assisted Statistics and Applications; Statistica Neerlandica.*
- Associate editor of *Econometrics and Statistics.*

RESEARCH GRANTS

- Grant I+D MTM2016-76969-P sponsored by Ministry of Economy and Competitiveness (Spain) and European Regional Development Fund (ERDF). Title: "Nonparametric modelling of dynamics and dependencies in complex systems". Date: 01/01/2017-31/12/2020. Awarded €157400.
- Grant I+D MTM2013-41383-P sponsored by Ministry of Economy and Competitiveness (Spain) and European Regional Development Fund (ERDF). Title: "Inferencia no paramétrica: modelización, estimación, contrastes y aplicaciones". Date: 01/01/2014-31/12/2016. Awarded €119743.75.

- Marie Curie Actions “Intra-European Fellowships for Career Development” FP7-PEOPLE-2011-IEF. Title: “Stochastic reserving based upon mathematical statistics”. Starting date 01/09/2012, duration 24 months. Awarded €278000.
- Grant sponsored by Institute of Actuaries UK (Non-profit). Title: “Adding prior knowledge to double chain ladder”. Grant date: 25/11/2011, duration 12 months. Awarded £11500.
- Grant I+D MTM2008-03010 sponsored by Ministerio de Ciencia e Innovación (Spain). Title: "Metodología y aplicaciones en Estadística Semiparamétrica, Funcional y Espacio Temporal". Date: 01/01/2009-31/12/2013. Awarded €335049.

TEACHING GRANTS

- Grants for innovation in teaching (Unit of educational innovation of the University of Granada and the Autonomic Government). Several projects between 2003 and 2012.

SELECTED INVITED TALKS

December 2018	Goodness-of-fit tests in proportional hazards models with random effects. Research seminar. Department of Statistics and O.R. University of Vigo, Spain.
October 2018	Goodness-of-fit tests in proportional hazards models with random effects. Meeting of the Royal Statistical Society of Belgium, Oct 17-19, 2018. Belgium.
April 2016	Scale and space inference of nonhomogeneous Poisson process intensities. Research seminar. Institute of Finance & Statistics. University of Bonn, Germany.
September 2015	<i>Do-validating local linear hazards.</i> Research seminar. Research Center for Statistics. University of Geneva.
February 2015	<i>Do-validating local linear hazards.</i> Research seminar. Department of Statistics and O.R. University of Santiago de Compostela, Spain.
April 2014	<i>Do-validating local linear hazards.</i> Research seminar. Department of Economics. University of Mannheim, Germany.
October 2013	<i>Double Chain Ladder and Continuous Chain Ladder: a statistical framework for claims reserving in non-life insurance.</i> Research seminar. Department of Actuarial Mathematics and Statistic. Heriot-Watt University, Edinburgh, UK.
June 2013	<i>Continuous Chain Ladder</i> , invited paper in the special session on Claims Reserving at International Cramér Symposium on Insurance Mathematics. Stockholm University, Sweden.
April 2012	<i>The Do-validation method with applications to survival data.</i> Research seminar. Department of Statistics and O.R. University of Santiago de Compostela, Spain.
July 2010	<i>Bootstrapping Nonparametric Mixed Effects Models</i> Research seminar. Department of Statistics and O.R. University of Valladolid, Spain.
January 2010	<i>Nonparametric Mixed Effects Models with applications to Small Area Statistics: Estimation and Parameter Choice</i> in the III Seminar of Small Area Statistics Inference at the University of A Coruña, Spain
May 2008	<i>SiZer Map for Inference with Additive Models.</i>

Research seminar. Department of Statistics and O.R. University of Santiago de Compostela, Spain

December 2007

The One-Sided Cross-Validation method for kernel estimation invited by the Center for Statistics. Georg-August-Universität Göttingen. Germany

October 2006

A Local Model Choice under Additivity invited by Däs Institut für Statistik un Ökonometrie lädt ein. Georg-August-Universität Göttingen. Germany

February 2005

SiZer Map for evaluating a bootstrap local bandwidth selector in nonparametric additive models. Research seminar Department of Statistics and O.R. University of Santiago de Compostela, Spain.