

José-Manuel REY

MATHEMATICIAN

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1. EDUCATION

- 1995 Ph.D. Mathematics.**
Faculty of Mathematics.
Complutense University of Madrid (Spain).
Title of PhD dissertation: "*Geometry of self-similar measures*".
Qualification: *Cum Laude*. Best thesis award (Faculty of Mathematics).
- 1989-91 M.Sc. Applied Mathematics.** (2 years degree).
Department of Mathematics.
Complutense University of Madrid (Spain).
- 1984-89 B.Sc. Mathematics.** (5 years degree).
Faculty of Mathematics.
Autonomous University of Madrid (Spain).

2. PROFESSIONAL EXPERIENCE

- > 2000 Associate Professor** (with tenure).
Department of Economic Analysis.
Complutense University of Madrid (Spain).
- > 2015 Associate Scholar**
Department of Psychology.
Harvard University (USA).
- 2025 Visiting Scholar** (May).
Harvard University (USA).
- 2024 Visiting Scholar** (May-June).
Harvard University (USA).
- 2023 Visiting Scholar** (June).
Harvard University (USA).

- 2018** **Visiting Scholar** (April-May).
Harvard University (USA).
- 2017** **Visiting Scholar** (February-June).
Harvard University (USA).
- 2016** **Visiting Scholar** (February-April).
Department of Applied Mathematics.
Technical University of Madrid (UPM) (Spain).
- 2015** **Visiting Scholar** (February-July).
Department of Psychology, and Institute for Quantitative Social Science.
Harvard University (USA).
- 1999** **Visiting Scholar** (January).
Isaac Newton Institute for Mathematical Sciences.
Cambridge University (UK).
- 1997-99** **Assistant Professor.**
Department of Economic Analysis.
Complutense University of Madrid (Spain).
- 1996** **Visiting Scholar** (July-December).
Centre for Nonlinear Dynamics and its Applications.
University College London (UK).
- 1996** **Visiting Scholar** (April-July).
Mathematical Institute.
University of St. Andrews, Scotland (UK).
- 1993** **Visiting Researcher** (February-September).
Department of Applied Mathematics.
School of Agricultural Engineering.
Technical University of Madrid (Spain).
- 1989-96** **Assistant Professor.**
Department of Economic Analysis.
Complutense University of Madrid (Spain).

3. PERSONAL GRANTS

- 2025** **Short-Term Harvard University Faculty Grant 2024-25.**
Real Colegio Complutense, Harvard University (USA).
- 2019** **Short-Term Harvard University Faculty Grant 2018-19.**
Real Colegio Complutense, Harvard University (USA).
- 2018** **Short-Term Harvard University Faculty Grant 2017-18.**
Real Colegio Complutense, Harvard University (USA).
- 2016** **Research Fellowship 2016-17.**
Senior Scientist Visiting Program Salvador de Madariaga.
Spanish Ministry of Education.
- 2014** **Research Fellowship 2014-15.**
Real Colegio Complutense, Harvard University (USA).

- 1996 **Postdoctoral Grant** (One Year Abroad).
Complutense University of Madrid.

4. AWARDS

- 2017 **Judges' Special Recognition Award** for the short film "1+1".
2017 Ballston Spa Film Festival, New York (USA).
- 2009 **Plus New Writers Award 2009.**
+Plus Magazine. Cambridge University (UK).
- 2008 **Plus New Writers Award 2008.**
+Plus Magazine. Cambridge University (UK).
- 1998 **Doctoral Dissertation Award** (1995 Best Thesis in Mathematics).
Complutense University of Madrid.

5. TEACHING EXPERIENCE

▷Undergraduate

>1989, Faculty of Economics, Complutense University of Madrid.

- o **Dynamic Optimization and Game Theory** (Dual degree Economics and Mathematics. 4th year, 6 year degree).
[yrs. 18/19, 19/20, 20/21, 21/22, 22/23, 23/24, 24/25]
- o **Game Theory and Optimization** (4th year, 4 year degree).
[yrs. 12/13, 13/14, 14/15, 15/16, 16/17, 17/18, 18/19, 19/20, 20/21, 21/22, 22/23, 23/24, 24/25]
- o **Mathematics III** (Optimization and Dynamics) (2nd year, 4 year degree). [\[in English\]](#)
[yrs. 9/10, 10/11, 11/12, 12/13, 13/14, 14/15, 15/16, 23/24]
- o **Mathematics III** (Optimization and Dynamics) (2nd year, 4 year degree).
[yrs. 11/12, 12/13, 14/15, 17/18, 18/19, 19/20, 20/21, 21/22, 22/23, 23/24, 24/25]
- o **Microeconomics III** (Production Theory) (2nd year, 4 year degree).
[yr. 13/14]
- o **Game Theory** (3rd year, former 5 year degree).
[yrs. 03/04, 04/05, 05/06, 06/07, 07/08, 08/09, 09/10, 10/11, 11/12, 12/13].
- o **Dynamic Optimization** (3rd year, former 5 year degree).
[yrs. 00/01, 01/02, 02/03, 03/04, 04/05, 05/06, 06/07, 07/08, 08/09, 09/10, 10/11].
- o **Dynamical Systems** (2nd year, former 5 year degree).
[yrs. 91/92, 92/93, 94/95, 95/96, 96/97, 99/00, 00/01, 01/02].
- o **Introduction to Mathematics for Economics** (1st year, former 5 year degree).
[yrs. 02/03, 03/04, 04/05, 05/06, 06/07, 07/08, 08/09]
- o **Mathematical Programming** (2nd year, former 5 year degree).
[yrs. 01/02, 02/03, 03/04, 04/05, 09/10]
- o **Mathematical Analysis** (1st year, former 5 year degree).
[yrs. 89/90, 90/91, 91/92, 95/96, 98/99, 00/01, 02/03, 06/07]
- o **Linear Algebra** (1st year, former 5 year degree)
[yrs. 96/97, 97/98, 98/99, 99/00]

▷Posgraduate

- o **Social Communication of Science.**
Master's Degree in Data Analysis and Communication. Universidad CEU San Pablo.
[yrs. 23/24, 24-25]

- O **Mathematical Methods for Economic Analysis.**
M.Sc. Public Economics, Institute of Fiscal Studies. Ministry of Finance (Spain).
[yrs. 92/93, 93/94, 94/95]
- O **Nonlinear Time Series Analysis.**
Ph.D. program, Department of Economic Analysis.
Complutense University of Madrid
[yrs. 97/98, 98/99]
- O **Economic Dynamics.**
Ph.D. program, Department of Economic Analysis.
Complutense University of Madrid
[yrs. 98/99, 99/00]

6. FUNDED RESEARCH PROJECTS

- 15. **2024** An interactive web application for the prospective analysis and simulation of personal well-being.
Funding: Avante Forte Services S.A. Spain.
PI: José-Manuel Rey (Complutense University of Madrid.)
- 14. **2016-19** Analysis and modelling of soil attributes and formation factors by fractal techniques, data mining and mathematical morphology.
Funding agency: Ministry of Science and Innovation, Spain. Ref. AGL2015-69697-P
PI: Miguel Angel Martín (Technical University of Madrid.)
- 13. **2012-15** Analysis, parameterization and modelling of soil and its physical properties by means of fractal techniques and affine mathematical methods.
Funding agency: Ministry of Science and Innovation, Spain. Ref. AGL2011-25175
PI: Miguel Angel Martín (Technical University of Madrid.)
- 12. **2009-12** Stochastic calculus with applications to Social Sciences.
Funding agency: Ministry of Science and Innovation, Spain. Ref. MTM2009-12672.
PI: Manuel Morán (Complutense University of Madrid.)
- 11. **2007-10** Porous structure, hydraulic properties and pollutant transport in structured soils: parameterization, modelling and simulation by fractal and affine methods.
Funding agency: Ministry of Science and Technology, Spain. Ref. AGL2007-62648.
PI: Miguel Angel Martín (Technical University of Madrid.)
- 10. **2007** Scale Dependences in Soil and Hydrologic Systems.
Funding agency: Ministry of Science and Technology, Spain. Ref. AGL2007-28609E.
PI: Miguel Angel Martín (Technical University of Madrid.)
- 9. **2007-10** Nonlinear stochastic equilibria: economic and environmental applications.
Funding agency: Ministry of Science and Technology, Spain. Ref. MTM2006-02372.
PI: Manuel Morán (Complutense University of Madrid.)
- 8. **2004-07** Fractal analysis and modelling of soil-water interaction. Application to the quantitative characterization of illuviation processes and their impact.
Funding agency: Ministry of Science and Technology, Spain. Ref. AGL2004-04079/AGR.
PI: Miguel Angel Martín (Technical University of Madrid.)
- 7. **2003-06** Dynamics and geometry of stochastic equilibria.
Funding agency: Ministry of Science and Technology, Spain. Ref. BFM2003-08204.
PI: Manuel Morán (Complutense University of Madrid.)

6. **2000-03** Separation of deterministic components in time series processing.
Funding agency: Ministry of Science and Technology, Spain. Ref. BX2000-0639.
PI: Manuel Morán (Complutense University of Madrid.)
5. **2000-03** Fractal parametrization and modelling to quantify soil quality and to simulate soil degradation processes.
Funding agency: Ministry of Science and Technology, Spain. Ref. REN2000-1542.
PI: Miguel Angel Martín (Technical University of Madrid.)
4. **2000-03** Fractal modelling and testing of soil hydraulic pedotransfer functions in order to quantify degradation of soils at the southern region of Madrid.
Funding agency: Comunidad Autónoma de Madrid, Spain.
PI: Miguel Angel Martín (Technical University of Madrid.)
3. **1998-00** Analysis of spatial correlations in time series.
Funding agency: Ministry of Science and Technology, Spain. Ref. DGES PB97-0301.
PI: Manuel Morán (Complutense University of Madrid.)
2. **1996-98** Nonlinear analysis of time series for financial markets.
Funding agency: Ministry of Science and Technology, Spain. Ref. DGES PS95-0193.
PI: Manuel Morán (Complutense University of Madrid.)
1. **1992-94** Detection of deterministic chaos in sea wave height time series.
Funding agency: Public Entity Spanish Ports, Ministry of Public Works and Transports.
PI: Manuel Morán (Complutense University of Madrid.)

7. LIST OF PUBLICATIONS

7.1 ARTICLES in REFEREED JOURNALS

34. A computational stochastic dynamic model to assess the risk of breakup in a romantic relationship.
 Jorge Herrera de la Cruz, José-Manuel **Rey**.
Mathematical Methods in the Applied Sciences (2023) 1-18
<https://doi.org/10.1002/mma.9292>
33. Controlling forever love.
 Jorge Herrera de la Cruz, José-Manuel **Rey**.
PLoS ONE 16(12): e0260529. (2021)
<https://doi.org/10.1371/journal.pone.0260529>
32. (Quasi)uniqueness and Restoring Dynamics of Price-Dispersion Equilibria under Search Costs.
 Francisco Álvarez and José-Manuel **Rey**.
Journal of Mathematical Economics 81C (2019) 1-13
<https://doi.org/10.1016/j.jmateco.2018.12.002>
31. Evolutionary Dynamics of Price Dispersion with Market-Dependent Costs.
 Francisco Álvarez, José-Manuel **Rey**, and Raúl G. Sanchís.
Computational Economics Online (2017) [November] 1-26. Print 53(3) (2019) 951-975.
<https://doi.org/10.1007/s10614-017-9770-9>
30. Pricing Strategy versus Heterogeneous Shopping Behavior under Market Price Dispersion.
 Francisco Álvarez, José-Manuel **Rey**, and Raúl G. Sanchís.
Abstract and Applied Analysis Volume 2016 (2016) Article ID 3254240, 8 pages.
<http://dx.doi.org/10.1155/2016/3254240>

29. Consumer's Response to Price Distribution and σ -Overload under Time Allocation.
Francisco Álvarez, José-Manuel **Rey**, and Raúl G. Sanchís.
Journal of Computational and Applied Mathematics **291** (2016) 242- 256.
<https://doi.org/10.1016/j.cam.2015.03.008>
28. Choice Overload, Satisficing Behavior, and Price Distribution in a Time Allocation Model.
Francisco Álvarez, José-Manuel **Rey**, and Raúl G. Sanchís.
Abstract and Applied Analysis, Volume 2014 (2014) Article ID 569054, 9 pages.
<http://dx.doi.org/10.1155/2014/569054>
27. Numerical Analysis of a Time Allocation Model Accounting for Choice Overload.
Raúl G. Sanchís, José-Manuel **Rey**, and Francisco Álvarez.
International Journal of Computer Mathematics Online (2013) [June] 1-12
Print **91**(2) (2014) 315-326.
<https://doi.org/10.1080/00207160.2013.799667>
26. Sentimental Equilibria with Optimal Control.
José-Manuel **Rey**.
Mathematical and Computer Modelling **57**(7-8) (2013) 1965-1969.
<https://doi.org/10.1016/j.mcm.2012.01.019>
25. A Mathematical Model of Sentimental Dynamics Accounting for Marital Dissolution.
José-Manuel **Rey**.
PLoS ONE **5**(3) e9881 (2010).
<https://doi.org/10.1371/journal.pone.0009881>
24. On the Fractal Modeling of Biomass Distributions: an Application to Size Class in Fisheries.
Carlos García-Gutiérrez, Miguel Ángel Martín, and José-Manuel **Rey**,
Ecological Complexity **6** (2009) 246-253.
<https://doi.org/10.1016/j.ecocom.2009.05.006>
23. Basic Quantization Properties of Balanced-Entropy.
José-Manuel **Rey**.
Geoderma **134** (3-4) (2006) 425-427.
<https://doi.org/10.1016/j.geoderma.2006.03.015>
22. Inter-Scale Behavior of Balanced Entropy for Soil Texture.
José-Manuel **Rey**, Eloísa Montero, and Miguel Ángel Martín.
Geoderma **134** (3-4) (2006) 415-425.
<https://doi.org/10.1016/j.geoderma.2006.03.015>
21. The Balanced Entropy Index to Characterize Soil Texture for Soil Water Retention Estimation.
Miguel Ángel Martín, Yakov A. Pachepsky, José-Manuel **Rey**, Fco. Javier Taguas, and Walter J. Rawls.
Soil Science **170** (10) (2005) 759-766.
<https://dx.doi.org/10.1097/01.ss.0000190507.10804.47>
20. An Entropy-Based Heterogeneity Index for Size Distributions in Earth Science.
Miguel Ángel Martín, José-Manuel **Rey**, and Fco. Javier Taguas.
Ecological Modelling **182**(3-4) (2005) 221-228.
<https://doi.org/10.1016/j.ecolmodel.2004.04.002>

19. An Entropy-Based Parameterization of Soil Texture Via Fractal Modelling of Particle-Size Distribution.
Miguel Ángel Martín, José-Manuel **Rey**, and Fco. Javier Taguas.
Proceedings of the Royal Society of London, Series A **457** (2001) 937-948.
<https://doi.org/10.1098/rspa.2000.0699>
18. On the Role of Shannon's Entropy as a Measure of Heterogeneity.
Miguel Ángel Martín and José-Manuel **Rey**.
Geoderma **98** (2000) 1-2.
[https://doi.org/10.1016/S0016-7061\(00\)00049-5](https://doi.org/10.1016/S0016-7061(00)00049-5)
- 17 Dimension of a Measure.
Pertti Mattila, Manuel Morán and José-Manuel **Rey**.
Studia Mathematica **142**(3) (2000) 219-233.
<https://doi.org/10.4064/sm-142-3-219-233>
16. The Role of Billingsley Dimensions in Computing Fractal Dimensions on Cantor-Like Spaces.
José-Manuel **Rey**.
Proceedings of the American Mathematical Society **128** (2000) 561-572.
<https://doi.org/10.1090/S0002-9939-99-05166-7>
15. Singularity of Self-Similar Measures with respect to Hausdorff Measures.
Manuel Morán and José-Manuel **Rey**.
Transactions of the American Mathematical Society, **350** (1998) 2297-2310.
<https://doi.org/10.1090/S0002-9947-98-02218-1>
- 14 Geometry of Self-Similar Measures.
Manuel Morán and José-Manuel **Rey**.
Annales Academiae Scientiarum Fennicae Mathematica **22** (1997) 365-386.
<http://www.acadsci.fi/mathematica/Vol22/moran.html>

7.2 OTHER REFEREED ARTICLES and PUBLICATIONS

14. Successful love stories as differential games
Jorge Herrera de la Cruz, José-Manuel **Rey**.
Modelling for Engineering & Human Behaviour (2023) 343-351.
Torregrosa, JR, Cortés, Vidal-Ferrándiz, A (eds.)
IMM, Universitat Politècnica de València. ISBN: 978-84-09-57681-4
<https://imm.webs.upv.es/jornadas/proceedings/Modelling2023.pdf>
13. An algorithm for solving feedback Nash stochastic differential games with an application to the psychology of love
Jorge Herrera de la Cruz, José-Manuel **Rey**.
Modelling for Engineering & Human Behaviour (2022) 125-133.
Torregrosa, JR, Cortés, JC, Hervás, A, Vidal-Ferrándiz, A, and. López-Navarro, E. (eds.)
IMM, Universitat Politècnica de València. ISBN: 978-84-09-47037-2
<https://imm.webs.upv.es/jornadas/proceedings/Modelling2022.pdf>
12. Whatever Happened to Adam and Eve's Relationship? [in Spanish]
José-Manuel **Rey**.
Pensamiento Matemático **5**(1) (2015) 75-82.
http://www2.caminos.upm.es/Departamentos/matematicas/revistapm/index4_vol_V_numero1.html
11. Maximizing and Satisficing in a Time Allocation Model.
Raúl G. Sanchís, José-Manuel **Rey**, Francisco Álvarez.
International Journal of Complex Systems in Science. **4**(1) (2014) 1-6.
<http://grupoecofractal.com/sites/default/files/user14/Max%20and%20Sat%20IJCSS%202014.pdf>

10. Societal Mathematics and Social Syndromes.[in Spanish]
 José-Manuel **Rey**.
Pensamiento Matemático **3**(1) (2013) 167-176.
http://www2.caminos.upm.es/Departamentos/matematicas/revistapm/index4_vol_III_numero1.html
9. Optimal Control of Long-Term Sentimental Dynamics.
 José-Manuel **Rey**.
Modelling for Engineering and Human Behaviour.
 Jódar, L., Acedo, L., Cortés, J.C., (eds.)
 IMM, Polytechnic University of Valencia (2012). ISBN:78-84-695-2143-4.
<https://jornadas.imm.upv.es/Modelling2011.pdf>
8. The Double Helix of the Social Sciences.[in Spanish]
 José-Manuel **Rey**.
Matematicalia **7** (2) June (2011).
<http://www.matematicalia.net/articulos/v7n2jun2011/jmrey.pdf>
7. Survival Odds: Are All Soldiers Equal?
 José-Manuel **Rey**.
 +*Plus Magazine*, **54** (2010).
<https://plus.maths.org/content/os/latestnews/jan-apr10/army/index>
6. The Carol Syndrome.
 José-Manuel **Rey**.
 +*Plus Magazine*, **51** (2009).
<https://plus.maths.org/content/carol-syndrome>
 ▷ Winner of the [Plus New Writers Award 2009](#) (Cambridge University, UK).
 ▷ Reprinted in [\[The Commutator\] 3\(1\) \(2012\) \(September\)](#)
5. If We All Go for the Blonde.
 José-Manuel **Rey**.
 +*Plus Magazine*, **47** (2008).
<https://plus.maths.org/content/if-we-all-go-blonde>
 ▷ Winner of the [Plus New Writers Award 2008](#) (Cambridge University, UK).
4. Negishi's Stability without Recontracting.
 José-Manuel **Rey**.
An Eponymous Dictionary of Economics (A Guide to Laws and Theorems Named after Economists).
 Segura, J. and Rodríguez Braun, C. (eds.).
 Edward Elgar (2005).
<https://books.google.es/books?id=Z6Oy4L-6LSwC&lpg=PP1&hl=es&pg=PR3#v=onepage&q&f=false>
3. A Formalism for the Dimensional Analysis of Time Series.
 Manuel Morán and José-Manuel **Rey**.
 IDEAS-RePec, Society for Computational Economics (1999).
Series Computing in Economics and Finance 1999, number 1331.
<https://ideas.repec.org/p/sce/scecf9/1331.html>

2. [Geometry of Self-Similar Sets and Measures](#). [in Spanish]
José-Manuel **Rey**.
Universidad Complutense de Madrid, 1995, ISBN 84-669-0717-3.
<https://eprints.ucm.es/3513/>
1. [Detection of Chaos in Time Series. An Application to Spanish Sea Swell](#).
Eugenia Mera, Manuel Morán, and José-Manuel **Rey**.
Working Paper #9507, Faculty of Economics, Complutense University, 1995.
<https://eprints.ucm.es/26654/>

7.3 REVIEW OF SCIENTIFIC PUBLICATIONS

- >Jan 2000. Reviewer of [Zentrablatt MATH](#) (European Mathematical Society)
60 reviews published (by June 2021)

7.4 BOOKS

4. [Mathematics for the Natural Sciences and Technology I](#) [in Spanish]
Miguel Ángel Martín, Manuel Morán, José-Manuel **Rey**, Miguel Reyes.
Bruño, 2002. ISBN: 84-216-4317-7.
3. [Mathematics for the Natural Sciences and Technology II](#) [in Spanish]
Miguel Ángel Martín, Manuel Morán, José-Manuel **Rey**, Miguel Reyes.
Bruño, 2002. ISBN: 84-216-4810-1.
2. [Mathematics for the Social Sciences I](#). [in Spanish]
Miguel Ángel Martín, Manuel Morán, José-Manuel **Rey**, Miguel Reyes.
Bruño, 2000. ISBN: 84-216-3695-2.
1. [Mathematics for the Social Sciences II](#). [in Spanish]
Miguel Ángel Martín, Manuel Morán, José-Manuel **Rey**, Miguel Reyes.
Bruño, 2000. ISBN: 84-216-3696-0.

8 LIST of PRESENTATIONS

8.1 COMMUNICATIONS in INTERNATIONAL CONFERENCES

34. **Jul 2024** *Sustainability of a romantic relationship via computational differential game modelling..*
Mathematical Modelling in Engineering and Human Behavior 2024.
Institute for Multidisciplinary Mathematics. Polytechnic City of Innovation.
Valencia (Spain). [presented by J. Herrera]
33. **Jul 2023** *Successful love stories as differential games.*
Mathematical Modelling in Engineering and Human Behavior 2023.
Institute for Multidisciplinary Mathematics. Polytechnic City of Innovation.
Valencia (Spain). [presented by J. Herrera]
32. **Jul 2022** *A computational stochastic dynamic model to assess the risk of breakup in a romantic relationship.*
Mathematical Modelling in Engineering and Human Behavior 2022.
Institute for Multidisciplinary Mathematics. Polytechnic City of Innovation.

31. **Jul 2019** *Differential love games*
Mathematical Modelling in Engineering and Human Behavior 2019.
Institute for Multidisciplinary Mathematics. Polytechnic City of Innovation.
Valencia (Spain). [presented by J. Herrera]
30. **Jun 2018** *1+1*
V International Workshop "Mathematics Everywhere".
Centro Internacional de Encuentros Matemáticos.
Castro Urdiales, Cantabria (Spain).
29. **Jul 2017** *Optimal pricing from shopping time distributions*
Mathematical Modelling in Engineering and Human Behavior 2017.
Institute for Multidisciplinary Mathematics. Polytechnic City of Innovation.
Valencia (Spain). [presented by R. G. Sanchís]
28. **Jul 2016** *Market dynamics under price and search cost dispersions*
Mathematical Modelling in Engineering and Human Behavior 2016.
Institute for Multidisciplinary Mathematics. Polytechnic City of Innovation.
Valencia (Spain). [presented by R. G. Sanchís]
27. **Sep 2015** *Pricing strategy versus shopping behavior under market price dispersion*
Mathematical Modelling in Engineering and Human Behavior 2015.
Institute for Multidisciplinary Mathematics. Polytechnic City of Innovation.
Valencia (Spain). [presented by R. G. Sanchís]
26. **Sep 2014** *Consumer's response to price distribution in a time allocation model.*
Mathematical Modelling in Engineering and Human Behavior 2014.
Institute for Multidisciplinary Mathematics. Polytechnic City of Innovation.
Valencia (Spain). [presented by F. Álvarez]
25. **Sep 2013** *Maximizing and satisficing in a choice model based in time allocation.*
Mathematical Modelling in Engineering and Human Behavior 2013.
Institute for Multidisciplinary Mathematics. Polytechnic City of Innovation.
Valencia (Spain). [presented by R. G. Sanchís]
24. **Sep 2012** *A time allocation model accounting for the paradox of choice.*
Mathematical Modelling in Engineering and Human Behavior 2012.
Institute for Multidisciplinary Mathematics. Polytechnic City of Innovation.
Valencia (Spain).
23. **Sep 2010** *Our love was to last forever. Hence we are breaking up now.*
11th Workshop on Optimal Control, Dynamic Games and Nonlinear Dynamics.
CeNDEF, University of Amsterdam.
Amsterdam (Netherlands).
22. **Jun 2008** *Love is not enough: a mathematical model explaining couple breakup.*
No Lineal 2008. Universitat Politècnica de Catalunya.
Barcelona (Spain).
21. **Sep 2007** *(Durable) love is a very unstable thing.*
EMPG38 (38th meeting of the European Mathematical Psychology Group.) University
of Luxembourg
Luxembourg.

20. **Sep 2007** *Gauguing Shannon's entropy to evaluate heterogeneity of mass-size distributions.*
No Lineal 2007 .Universidad de Castilla-La Mancha.
Ciudad Real (Spain).
19. **Jul 2004** *Properties and uses of the balanced-entropy index for soil textural analysis.*
PEDOFRACT'04. International Workshop on Fractal Mathematics Applied to Soil and Related Systems.
El Barco de Ávila (Spain).
18. **Jun 2004** *A generalization of Shannon's entropy to evaluate heterogeneity of mass-size distributions.*
Workshop on Mathematical Economics.
Complutense University of Madrid.
Madrid (Spain).
17. **Feb 2003** *A simple entropy index to evaluate heterogeneity of mass-size distributions: application to soil texture.*
Applied Mathematics & Applications of Mathematics (AMAM 2003).
Nice (France).
16. **Jul 2002** *Dimensions of measures and correlation dimensions.*
X Congresso di Analisi Reale e Teoria della Misura (C.A.R.Te.Mi. X).
Ischia (Italy).
15. **Jun 2002** *Balancing entropy to measure biodiversity and soil texture.*
PEDOFRACT'04. International Workshop on Fractal Mathematics Describing Soil and Other Heterogenous Systems.
El Barco de Ávila (Spain).
14. **Jun 2001** *Properties of the dimension of a measure and the behavior of correlation dimensions.*
Fractals in Graz 2001. University of Graz.
Graz (Austria).
13. **Jul 2000** *Dimension of a measure.*
VI International Conference on Harmonic Analysis and Partial Differential Equations.
El Escorial (Spain).
12. **Sep 2000** *On the properties of dimensions of measures and how good correlation dimensions are..*
IX Congresso di Analisi Reale e Teoria della Misura (C.A.R.Te.Mi. IX).
Grado (Italia).
11. **Sep 2000** *An entropy-based parametrization of textures in disordered media.*
IX Congresso di Analisi Reale e Teoria della Misura (C.A.R.Te.Mi. IX).
Grado (Italia).
10. **Sep 1999** *Dimensional analysis of time series.*
International Workshop on Chaotic Dynamics and Fractals in Geosciences.
School of Agricultural Engineering. Technical University of Madrid.
Madrid (Spain).
9. **Jun 1999** *A formalism for the dimensional analysis of time series.*
CEF'99 (Computing in Economics and Finance).
Fifth International Conference of the Society for Computational Economics.
Boston College, Chesnut Hill, Massachusetts (USA).

8. **Feb 1999** *Dimension of a measure.*
International Workshop on the Structure of Hyperbolic Measures.
Complutense University of Madrid.
Madrid (Spain).
7. **Jan 1999** *Dimensions and measures in time series analysis.*
Workshop on Multifractals and Applications.
Isaac Newton Institute for Mathematical Sciences, Cambridge University.
Cambridge (UK).
6. **Sep 1998** *On the role of geometry in computing dimensions within fractal spaces.*
VIII Congresso di Analisi Reale e Teoria della Misura (C.A.R.Te.Mi. VIII),
Maiori (Italy)
5. **Sep 1998** *Billingsley dimension and fractal geometry.*
Conference on Fractal Geometry and Stochastics II.
Greifswald (Germany).
4. **Jul 1996** *Packing and Hausdorff geometry of self-similar measures.*
VII Congresso di Analisi Reale e Teoria della Misura (C.A.R.Te.Mi. VII).
Ischia (Italy).
3. **Jul 1995** *A new method for detecting chaotic dynamics in time series. An application to the analysis of significant wave height series.*
International Union of Geodesy and Geophysics (IUGG), XXI General Assembly,
Boulder, Colorado, (USA) [presented by M. Alfonso]
2. **May 1995** *Efficient ways of covering cylinders by balls in self-similar constructions*
ERGOFRAC'T'95 (International Meeting on Chaos, Fractals, and Ergodic Theory),
Las Palmas de Gran Canaria (Spain). [presented by M. Morán]
1. **May 1995** *Hausdorff singularity of self-similar measures*
ERGOFRAC'T'95 (International Meeting on Chaos, Fractals, and Ergodic Theory),
Las Palmas de Gran Canaria (Spain).

8.2 PLENARY LECTURES at CONFERENCES

9. **Nov 2018** *Cuatro ideas sobre el bienestar, con ciencia [Plenary Speaker]*
[Four scientific ideas about well-being].
I Encuentro de Economía Senior
Senior Economy Forum, IE Foundation, CaixaBank
Segovia (Spain).
8. **Jul 2018** *Will I love you forever? Equations of durable love [Plenary Speaker]*
Why do (not) we love? The science of romantic relationships.
Summer Course. Complutense University of Madrid.
El Escorial (Spain).
7. **Sep 2016** *Our love was to last forever [Plenary Speaker]*
Paradigmatic Models in Social Science.
11th International Workshop "Topics in Nonlinear Dynamics".
Italian Society for Chaos and Complexity.
Politecnico di Milano, Milano (Italy)

6. **Jul 2016** *And they lived (not) happily ever after.* **[Plenary Speaker]**
Why are (not) we happy? The science of happiness and its implications.
Summer Course. Complutense University of Madrid.
El Escorial (Spain).
5. **Jul 2018** *Romantic attraction and social interaction.* **[Plenary Speaker]**
Why do (not) we love? The science of romantic relationships.
Summer Course. Complutense University of Madrid.
El Escorial (Spain).
4. **May 2014** *Whatever happened to Adam and Eve's love relationship?* **[Plenary Speaker]**
III International Workshop "Mathematics Everywhere".
Centro Internacional de Encuentros Matemáticos.
Castro Urdiales, Cantabria (Spain).
3. **Jun 2012** *Societal mathematics and social syndromes.* **[Plenary Speaker]**
II International Workshop "Mathematics Everywhere".
Centro Internacional de Encuentros Matemáticos.
Castro Urdiales, Cantabria (Spain).
2. **Sep 2011** *Optimal control of long-term sentimental dynamics.* **[Plenary Speaker]**
Conference "Mathematical Modelling in Engineering Human Behavior".
Institute for Multidisciplinary Mathematics. Polytechnic City of Innovation,
Valencia (Spain).
1. **May 2011** *Society minus science equals crisis?* **[Plenary Speaker]**
Workshop "The Necessary Scientific Society: More Science, Less Crisis."
Universidad Internacional Menéndez Pelayo.
Sevilla (Spain).

8.3 INVITED SEMINAR TALKS

21. **Jun 2023** *Some key facts about micro and macro happiness.*
Department of Psychology.
Harvard University.
Cambridge, MA (USA).
20. **Mar 2017** *The Carol syndrome: romantic attractiveness and inhibition.*
Department of Psychology.
Harvard University.
Cambridge, MA (USA).
19. **Apr 2017** *The orchestra effect.*
Department of Psychology.
Harvard University.
Cambridge, MA (USA).
18. **Mar 2017** *1+1.*
Department of Psychology.
Harvard University.
Cambridge, MA (USA).

17. **May 2016** *Love Engineering*
Schools of Agricultural Engineering.
Technical University of Madrid (Spain).
16. **Apr 2015** *Is it possible to make love last?*
Real Colegio Complutense at Harvard,
Harvard University
Cambridge, MA (USA).
15. **Mar 2015** *Our love was to last forever.*
Department of Psychology.
Harvard University
Cambridge, MA (USA).
14. **Dic 2009** *The invisible hand and the platinum blonde.*
Research Seminar. Department of Mathematics. Public University of Navarre.
Pamplona (Spain).
13. **Dic 2007** *Control and failure of sentimental dynamics*
Research Seminar. Department of Mathematics. Public University of Navarre.
Pamplona (Spain)
12. **May 1999** *Geometry of self-similar measures.*
Seminar. Department of Mathematics.
Autonomous University of Madrid.
Madrid (Spain).
11. **Jun 1998** *A formalism for the dimensional analysis of time series.*
Research Seminar. Department of Mathematics.
University of Castilla-La Mancha
Ciudad Real (Spain).
10. **May 1997** *Billingsley dimensions on Cantor-like spaces.*
Fractal Geometry Seminar. Complutense University and Technical University.
Madrid (Spain).
9. **Nov 1996** *Nonlinear signal analysis: some results and practicalities.*
Nonlinear Dynamics Seminar. Centre for Nonlinear Dynamics and its Applications.
University College London
8. **Nov 1996** *Hausdorff and packing self-similar geometry.*
Research Seminar. Department of Mathematics.
University College London.
London (UK)
7. **Jun 1996** *Billingsley dimensions on self-similar spaces.*
Analysis Seminar. Mathematical Institute.
University of St. Andrews.
St. Andrews (Scotland).
6. **May 1996** *Geometric-size properties of self-similar measures.*
Analysis Seminar. Mathematical Institute.
University of St. Andrews.
St. Andrews (Scotland).

5. **Mar 1996** *Local representation of Hausdorff and packing dimensions.*
Fractal Geometry Seminar.
Complutense University and Technical University.
Madrid (Spain).
4. **Jun 1995** *Geometry of self-similar measures.*
Research Seminar. Department of Mathematical Analysis.
Complutense University of Madrid.
Madrid (Spain).
3. **Jun 1994** *Product measures on self-similar spaces.*
Research Seminar. Department of Mathematical Analysis.
Complutense University of Madrid.
Madrid (Spain).
2. **Dic 1993** *Detection of chaos in experimental signals.*
Mathematics Seminar. Schools of Engineering (Civil, Agricultural and Architecture).
Technical University of Madrid.
Madrid (Spain).
1. **Abr 1993** *Nonlinear time series analysis.*
Research Seminar. Department of Applied Mathematics.
School of Agricultural Engineering.
Technical University of Madrid.
Madrid (Spain).

8.4 INVITED LECTURES on POPULARIZATION OF SCIENCE [in Spanish]

o UNIVERSITY LEVEL

10. **Feb 2023** *La lógica del amor eterno. [The equations of eternal love.]*
Colegio Mayor Padre Poveda.
Madrid (Spain).
9. **Feb 2022** *La lógica de tu felicidad. Ideas de la ciencia. [The logic of happiness. Ideas from science.]*
Colegio Mayor Padre Poveda.
Madrid (Spain).
8. **Mar 2019** *La lógica del amor. Ecuaciones del amor duradero [The logic of love. Equations of durable love.]*
Colegio Mayor Marqués de la Ensenada.
Madrid (Spain).
7. **Mar 2011** *Mathematics and everything else.*
Faculty of Economics and Business Administration.
Autonomous University of Madrid (Spain).
6. **Nov 2010** *Game theory and economics.*
Faculty of Economics and Business Administration.
Autonomous University of Madrid (Spain).
5. **Dic 2010** *Not without mathematics*
School of Agricultural Engineering.
Technical University of Madrid (Spain).

- 4. **Nov 2007** *Could you live without mathematics?*
Faculty of Environmental Sciences.
University of Castilla-La Mancha. Toledo (Spain).
- 3. **Nov 2004** *Why is mathematics useful?*
Faculty of Computer Sciences.
Technical University of Madrid (Spain).
- 2. **Sep 2004** *Why mathematics?*
School of Agricultural Engineering.
Technical University of Madrid (Spain).
- 1. **May 2004** *What is mathematics for?*
Faculty of Education. University program for older students.
University of Valladolid (Spain).

o HIGH SCHOOL LEVEL

- 9. **Abr 2025** *La realidad matemática [The mathematical reality]*
I.E.S Cencibel, Villarrobledo (Albacete)
- 8. **Dec 2018** *¿Son las matemáticas, estúpido! [It's the mathematics, stupid!]*
I.E.S Cencibel, Villarrobledo (Albacete)
- 7. **May 2017** *1+1. El papel de la ciencia en el bienestar humano [1+1. The role of science in well-being]*
Colegio Veritas (Madrid)
- 6. **Mar 2010** *Invitación a las matemáticas de las Ciencias Sociales [Invitation to mathematics for the social sciences]*
Colegio Veritas (Madrid)
- 5. **Abr 2008** *¿Para qué sirven las matemáticas? [What are Maths for?]*
Colegio Veritas (Madrid)
- 4. **Jun 2004** *Mathematics and the real world.*
Colegio Joyfe (Madrid)
- 3. **May 2004** *Matemáticas y el mundo real [Mathematics and the real world.*
Colegio Nuevo Equipo (Madrid)
- 2. **May 2004** *Matemáticas y el mundo real [Mathematics and the real world.*
Colegio Arturo Soria (Madrid).
- 1. **Sep 2000** *Invitación a las matemáticas de las Ciencias Sociales [Invitation to mathematics for the social sciences.]*
Colegio Nuevo Equipo (Madrid).

o GENERAL AUDIENCE

- 21. **Oct 2023** *Ciencia, Belleza y Sociedad. [Science, Beauty and Society]*
CaixaForum Madrid.
- 20. **May 2023** *Ciencia, Belleza y Sociedad. [Science, Beauty and Society]*
CaixaForum Palma de Mallorca.
- 19. **May 2023** *Ciencia, Belleza y Sociedad. [Science, Beauty and Society]*
CosmoCaixa Museo de la Ciencia. Barcelona.

18. **Abr 2023** *¿Por qué (no) somos felices? Ideas de la ciencia de la felicidad [Why are (not) we happy?]*
CaixaForum Zaragoza.
17. **Feb 2023** *¿Por qué (no) somos felices? Ideas de la ciencia de la felicidad [Why are (not) we happy?]*
CaixaForum Girona.
16. **Nov 2022** *¿Por qué (no) somos felices? Ideas de la ciencia de la felicidad [Why are (not) we happy?]*
CaixaForum Tarragona.
15. **Oct 2022** *¿Por qué (no) somos felices? Ideas de la ciencia de la felicidad [Why are (not) we happy?]*
CaixaForum Lleida
14. **Mar 2022** *¿Por qué (no) somos felices? Ideas de la ciencia de la felicidad [Why are (not) we happy?]*
CosmoCaixa Barcelona.
13. **Mar 2022** *¿Por qué (no) somos felices? Ideas de la ciencia de la felicidad [Why are (not) we happy?]*
CaixaForum Palma.
12. **Feb 2022** *¿Por qué (no) somos felices? Ideas de la ciencia de la felicidad [Why are (not) we happy?]*
CaixaForum Madrid.
11. **Mar 2021** *El eterno amor. Ecuaciones del amor verdadero [Endless Love. The equations of true love]*
CaixaForum Palma.
10. **Feb 2021** *El eterno amor. Ecuaciones del amor verdadero [Endless Love. The equations of true love]*
CosmoCaixa Barcelona.
9. **Jan 2021** *El eterno amor. Ecuaciones del amor verdadero [Endless Love. The equations of true love]*
CaixaForum Lleida.
8. **Sep 2020** *El eterno amor. Ecuaciones del amor verdadero [Endless Love. The equations of true love]*
CaixaForum Girona.
7. **Feb 2020** *El eterno amor. Ecuaciones del amor verdadero [Endless Love. The equations of true love]*
CaixaForum Zaragoza.
6. **Feb 2020** *El eterno amor. Ecuaciones del amor verdadero [Endless Love. The equations of true love]*
CaixaForum Sevilla.
5. **Ene 2020** *El eterno amor. Ecuaciones del amor verdadero [Endless Love. The equations of true love]*
CaixaForum Tarragona.
4. **Feb 2019** *El eterno amor. Ecuaciones del amor verdadero [Endless Love. The equations of true love]*
CaixaForum Madrid.
3. **Apr 2018** *Mathematical Psychology: analysis of romantic relationships. [in English]*
Longwood Towers Speaker Series, Longwood Towers, Brookline, MA (USA)
2. **Mar 2018** *Psicología del amor y matemáticas. [Psychology of love and mathematics]*
Asociación de Gourmets de Madrid
1. **Abr 2004** *Why you need mathematics*
Military Prison. Alcalá de Henares (Madrid).

8.5 INVITED LECTURES on UNIVERSITY EDUCATION

2. **Apr 2007** *Pilot experience on the European Higher Education Space.*
School of Agricultural Engineering.
Technical University of Madrid (Spain).
1. **Jun 2006** *Teaching mathematics in the European Higher Education Space.*
Faculty of Economics. University of Alicante (Spain).

8.6 INVITED LECTURES at PRIVATE CORPORATIONS

6. **Oct 2024** *La lógica del bienestar humano*
[The logic of human well-being]
Fonditel. Pensiones EGFP S.A. Madrid (Spain).
5. **Sep 2022** *Ideas científicas sobre la felicidad.*
[Scientific ideas about happiness]
Agem Russell Bedford. San Sebastián (Spain).
4. **Jun 2022** *La ciencia de la felicidad y sus implicaciones.*
[The science of happiness and its implications]
Jornadas de Compliance & DPO. Telefónica S.A: Buitrago de Lozoya. Madrid (Spain).
3. **May 2022** *La lógica de nuestra felicidad.*[The logic of our happiness]
Proyecto Cultura Global ONCE.
ONCE Illes Balears. Palma de Mallorca (Spain).
2. **Feb 2022** *Bases científicas del bienestar: las claves de tu felicidad.*
[Science of well-being: keys to happiness]
Jornadas de Políticas Públicas, Regulación y Competencia
Telefónica S.A. Madrid (Spain)
1. **Nov 2021** *Fabricando experiencias, transformando equipos*
[Creating experiences, Transforming teams]
San Pablo Inmobiliaria. Burgos (Spain).

8.7 COURSES GIVEN

5. **Apr 2009** *Stellar mathematical moments in History.* (9 hours)
Training Program for Mathematical Teachers.
Territorial Centre of Training and Innovation (CTIF) Madrid Sur, Leganés (Spain).
4. **Jan 2009** *The invisible universe of mathematics.* (21 hours)
Training Program for Mathematical Teachers.
Territorial Centre of Training and Innovation (CTIF) Madrid Sur, Fuenlabrada (Spain).
3. **Feb 2008** *Societal mathematics and social syndromes.* (6 hours)
Training Program for Mathematical Teachers.
Centre of Training and Innovation. CAP Getafe (Spain).
2. **May 2007** *Mathematics of strategy.* (6 hours)
Training Program for Mathematical Teachers.
Territorial Centre of Training and Innovation. CAP Fuenlabrada (Spain).
1. **Jul 2005** *Multidimensional chaos.* (5 hours)
Summer School.
University of Teruel (Spain).

9 ORGANIZATION OF CONFERENCES AND SCIENTIFIC EVENTS_____

9.1 INTERNATIONAL CONFERENCES

6. **May 2012** PEDOFRACT'12. International Workshop on Scaling in Particulate and Porous Media: Modeling and Use in Predictions
A Coruña (Spain)
Member of the Organizing Committee. Member of the Scientific Committee.
5. **Jul 2007** PEDOFRACT'07. International Workshop on Scale Dependences in Soil and Hydrologic Systems.
El Barco de Ávila (Spain)
Member of the Organizing Committee.
4. **Jul 2004** PEDOFRACT'04. International Workshop on Fractal Mathematics describing Soil and Related Heterogeneous Systems.
El Barco de Ávila (Spain)
Member of the Organizing Committee.
3. **Feb 2003** Mathematical Modelling, Characterization and Computer Simulation of Particle-Size and Other Distributions in Soil and Fragmented Systems. AMAM 2003 (Applied Mathematics and Applications of Mathematics)
Nice (France)
Member of the Organizing Committee.
2. **Jul 2002** PEDOFRACT'02. International Workshop on Fractal Mathematics describing Soil and Heterogeneous Systems.
El Barco de Ávila (Spain)
Member of the Organizing Committee.
1. **Feb 1999** International Workshop on the Structure of Hyperbolic Measures. .
Complutense University of Madrid (Spain).
Member of the Organizing Committee.

9.2 COURSES

4. **Jul 2018** Why do (not) we love? The science of romantic relationships.
Summer Course. Complutense University of Madrid.
El Escorial (Spain), July 4-5
Director of the course.
3. **Jul 2016** Why are (not) we happy? The science of happiness and its implications.
Summer Course. Complutense University of Madrid.
El Escorial (Spain), July 11-13
Co-Director of the course.
2. **May 2011** The Necessary Scientific Society: More Science, Less Crisis. (14 hours)
Universidad Internacional Menéndez Pelayo. Sevilla (Spain)
Director of the course.
1. **Jan 2009** The invisible universe of mathematics. (21 hours)
Territorial Centre of Training and Innovation (CTIF) Madrid Sur, Fuenlabrada.
Director and Speaker.

9.3 SPEAKER SERIES-GENERAL AUDIENCE

18. **Oct 2023** La lógica de la belleza [The logic of beauty].
CaixaForum Madrid. 4/10 – 25/10
Coordinador/Organizer.
17. **May 2023** La lógica de la belleza [The logic of beauty].
CaixaForum Palma. 4/20 – 5/11
Coordinador/Organizer.
16. **Abr 2023** La lógica de la belleza [The logic of beauty].
CosmoCaixa Barcelona. 4/13 – 5/4
Coordinador/Organizer.
15. **Abr 2023** La lógica de la felicidad [The logic of happiness].
CaixaForum Zaragoza. 4/4 – 4/25
Coordinador/Organizer.
14. **Feb 2023** La lógica de la felicidad [The logic of happiness].
CaixaForum Girona. 2/1 – 2/22
Coordinador/Organizer.
13. **Nov 2022** La lógica de la felicidad [The logic of happiness].
CaixaForum Tarragona. 11/7 – 11/28
Coordinador/Organizer.
12. **Oct 2022** La lógica de la felicidad [The logic of happiness].
CaixaForum Lleida. 10/19 – 11/9
Coordinador/Organizer.
11. **Mar 2022** La lógica de la felicidad [The logic of happiness].
CosmoCaixa Barcelona. 3/16 – 4/6
Coordinador/Organizer.
10. **Mar 2022** La lógica de la felicidad [The logic of happiness].
CaixaForum Palma de Mallorca. 3/3 – 3/24
Coordinador/Organizer.
9. **Feb 2022** La lógica de la felicidad [The logic of happiness].
CaixaForum Madrid. 2/2 – 2/23
Coordinador/Organizer.
8. **Mar 2021** La lógica del amor [The logic of love].
CaixaForum Palma de Mallorca. 3/4 – 3/17
Coordinador/Organizer.
7. **Feb 2021** La lógica del amor [The logic of love].
CosmoCaixa Barcelona. 2/3 – 2/17
Coordinador/Organizer.
6. **Jan 2020** La lógica del amor [The logic of love].
CaixaForum Lleida. 1/19 – 2/2
Coordinador/Organizer.

5. **Mar 2020** La lógica del amor [The logic of love].
CaixaForum Girona. 2/25 – 10/6
Coordinador/Organizer.
4. **Feb 2020** La lógica del amor [The logic of love].
CaixaForum Zaragoza. 2/4 – 2/25
Coordinador/Organizer.
3. **Feb 2020** La lógica del amor [The logic of love].
CaixaForum Sevilla. 1/23 – 2/13
Coordinador/Organizer.
2. **Ene 2020** La lógica del amor [The logic of love].
CaixaForum Tarragona. 1/13 – 1/27
Coordinador/Organizer..
1. **Feb 2019** La lógica del amor [The logic of love].
CaixaForum Madrid. 1/28 – 2/18
Coordinador/Organizer..

10 **PhD THESES SUPERVISED**

1. **Jun 2013** *Time microeconomics: on the allocation of time and choice overload*
authored by Raúl G. Sanchís.
European Mention Doctorate.
Doctoral Dissertation Award (2013 Best Thesis in Economics).
Complutense University of Madrid (Spain).

11 **OTHER SCIENTIFIC MERITS**

11.1 Scientific EDITOR

- (> 2021) Journal *Mathematics*

11.2 REFEERING for PEER-REVIEW JOURNALS

- SIAM Journal of Mathematics.
- Nonlinearity.
- Pure and Applied Geophysics.
- Applied Mathematical Letters.
- Journal of Theoretical Biology.
- PLoS ONE.
- Chaos-An interdisciplinary Journal of Nonlinear Science.
- Health.
- Stochastics: An International Journal of Probability and Stochastic Processes.
- Chaos, Solitons & Fractals.
- Entropy

11.2 Scientific REVIEWER

- (> 2000) Zentralblatt MATH. European Mathematical Society.

11.4 MEMBER of PhD COMMITTEES

- Oct 2021** Modeling social phenomena via emergent properties of interconnected networks within a community
by Mariamo Mussa Juane
Faculty of Physics. University of Santiago de Compostela. (Spain).
(Head of the Committee)
- Nov 2020** Numerical resolution of Deterministic and Stochastic in Feedback Nash Equilibria
by Jorge Herrera de la Cruz
Faculty of Mathematics. Complutense University of Madrid (Spain).
(Head of the Committee)
- Dec 2016** Quantifying patterns of complexity controlled by parent material at different spatial scales: from drainage network architecture at landscape scale to soil texture
by Joaquín Cámara Gajate.
School of Agricultural Engineering, Technical University of Madrid (Spain).
- Oct 2010** Characterization and modeling of soil texture and structure using image processing techniques and fractal geometry. Application to diffusion in porous media.
by Carlos García-Gutiérrez.
School of Agricultural Engineering, Technical University of Madrid (Spain).
- Jun 2006** Dimension print and self-similar measures with overlapping.
by Victor Ruiz Morcillo
Faculty of Computer Science. Technical University of Madrid (Spain).
- Jun 2004** Continuous Lipschitz dynamic programming. Application to the optimal exploitation of renewable resources under increasing returns.
by José María Maroto
Faculty of Economics. Complutense University of Madrid (Spain).
- May 2003** Application of multifractal analysis techniques to mass-size distributions of soil particles obtained by laser diffraction.
by Eloísa Montero
School of Agricultural Engineering, Technical University of Madrid (Spain).
- Mar 1999** Efficient strategies in future and option markets.
by Juan Garrido
Faculty of Economics. Complutense University of Madrid (Spain).
- Apr 1997** Multifractal Analysis of pore size distribution in soil.
by Javier Caniego
School of Agricultural Engineering, Technical University of Madrid (Spain).
- Oct 1995** Fractal modeling of particle size distribution in soil.
by Francisco Javier Taguas
School of Agricultural Engineering, Technical University of Madrid (Spain).

11.5 EDITORIAL EXPERIENCE

1998-2002 Editorial Coordinator of Mathematics for the Publishing Company Bruño.

11.6 OTHER WRITINGS

- 5 La realidad matemática [The mathematical reality]
José-Manuel Rey
The Conversation, Spain March 14, 2025.
<https://theconversation.com/la-realidad-matematica-252048>
- 4 ¿Cómo se rompe una pareja? Anatomía matemática de una caída [Can science explain why couples break up? The mathematical anatomy of a fall]
José-Manuel Rey and **Jorge Herrera de la Cruz**
The Conversation, Spain/Europe/ Brasil editions. April 17, 2024.
<https://theconversation.com/como-se-rompe-una-pareja-anatomia-matematica-de-una-caida-226271>
- 3 Cómo celebrar el Día de Pi en el bar [How to celebrate Pi Day at the bar]
José-Manuel Rey
The Conversation, March 13, 2019.
<https://theconversation.com/como-celebrar-el-dia-de-pi-en-el-bar-113496>
- 2 El amor eterno ¿es científicamente posible? [Is eternal love scientifically possible?]
José-Manuel Rey
The Conversation, February 13, 2019.
<https://theconversation.com/el-amor-eterno-es-cientificamente-posible-111802>
- 1 “1+1”
Rubén Pacheco and **José-Manuel Rey** (2015)
Screenplay for the short film “1+1” directed by Rubén Pacheco (2016).

11.7 MEDIA COVERAGE

- The research on the mathematical modeling of sentimental relationships in **José-Manuel Rey**. [A mathematical model of sentimental dynamics accounting for marital dissolution](#). *PLoS ONE* 5(3) e9881 (2010).
was covered by media worldwide, e.g.
 - o [It Takes 30 \(Harvard Medical School, US\)](#)
 - o [PhysOrg.com \(UK\)](#)
 - o [The Globe and the Mail \(Canada\)](#)
 - o [KLTV \(Texas, US\)](#)
 - o [Epoca \(Brasil\)](#)
 - o [Pravda \(Russia\)](#)
 - o [Público \(Spain\)](#)
 - o [SINC \(Spain\)](#)
 - o [Mathematics for Planet Earth \(France\)](#)
 - o [The Atlantic \(Washington, US\)](#)
 - o [Need to Know on PBS \(NY, US\)](#)
 - o [I \(Portugal\)](#)
 - o [Ingenioren \(Denmark\)](#)
 - o [El Universal \(Mexico\)](#)
 - o [ABC \(Spain\)](#)
 - o [Muy Interesante \(Spain\)](#)
- The mathematical modeling on attractive women and dating in **José-Manuel Rey**. [The Carol Syndrome](#). *+Plus Magazine*, 51 (2009)
was covered by
 - o [Salon.com](#)

11.8 MEDIA COLLABORATIONS

> 2011 "Julia en la Onda" (Radio Station ONDA CERO, Spain)

Scientific Commentator for social issues.