

## CURRICULUM VITAE

**Prof. Dr. Jorge Mateu**

### 1. EDUCATION-CAREER

- [1987-92] *Undergraduate Studies in Mathematics and Statistics*, Faculty of Mathematics, University of Valencia.
- [1992-94] *320 hours of Ph.D courses*, Department of Mathematics, University of Valencia.
- [1995] *M.Sc. by thesis “Procesos Puntuales: Modelización y Estimación de los Modelos Markov”*, Department of Mathematics, University of Valencia.
- [1998] *Ph.D. by thesis “Spatial Gibbs Point Processes: Simulation and Estimation”*, Department of Mathematics, University of Valencia.

### 2. PROFESSIONAL EXPERIENCE

#### **Permanent Appointments**

- [1 October 1992-5 November 1992] *Grant Holder*, Department of Statistics and Operations Research, University of Valencia, Spain.
- [5 November 1992-12 July 2000] *Assistant Professor of Statistics*, Department of Mathematics, University Jaume I of Castellón, Spain.
- [12 July 2000- 25 September 2007] *Associate Professor of Statistics*, Department of Mathematics, University Jaume I of Castellón, Spain.
- [25 September 2007-Present] *Full Professor of Statistics*, Department of Mathematics, University Jaume I of Castellón, Spain.

#### **Visiting Positions**

- 1993 (2 months) *Visiting Research Student*, Department of Mathematics and Statistics, Lancaster University, Lancaster, UK.
- 1996 (1 month) *Visiting Research Student*, Department of Mathematics and Statistics, Lancaster University, Lancaster, UK.
- 1997 (2 months) *Visiting Research Student*, Department of Mathematics and Statistics, Lancaster University, Lancaster, UK.
- 1998 (2 months) *Visiting Lecturer*, Department of Mathematics and Statistics, Lancaster University, Lancaster, UK.

### 3. RESEARCH GRANTS

#### **Joint Principal Investigator**

- Statistics for spatial distributions and image analysis. *Bancaja*, 1993-1994. **10645 EUROS**
- Statistics for spatio-temporal data. Applications to Economy, Medicine and Biology. *Bancaja*, 1995-1997. **24522 EUROS**

- Analysis of sequences of digital images: application to eye disease diagnosis. *Generalitat Valenciana*, 1995-1996. **41470 EUROS**
- Generation of computational languages for complex system modelling. *Generalitat Valenciana*, 1999-2000. **4808 EUROS**
- Statistical modelling of Mediterranean ecosystems after forest fires. *Generalitat Valenciana*, 1998-2000. **15025 EUROS**
- Application of Stochastic Geometry models to ceramic design. *Generalitat Valenciana*, 2000-2001. **6912 EUROS**
- Abstract categories in genomic regulation networks. *Ministerio de Educación y Ciencia* (Programme EXPLORA 2006), 2006-2007. **13150 EUROS**.
- Network on corporative research in computational biomedicine (CONBIOMED). *Ministerio de Sanidad y Consumo*, 2008. **30616 EUROS**
- Research collaboration with the Euromediterranean Institute of Water: Optimization and modelling of transport of plaguicides and fertilizers, 2009. **16390 EUROS**.
- OBENOMICS: plataforma Web para la gestión e integración del conocimiento en Epidemiología Genómica de la Obesidad. *Conselleria de Sanidad, Generalitat Valenciana, AP-050/09*, 2009. **6000 EUROS**.
- NUTRIFIS: Development of a computational biomedical tool to integrate food ingestion and physical activity in paediatric attention. *Instituto de Salud Carlos III - Fondo de investigaciones Sanitarias (ISCIII-FIS), Ministerio de Ciencia e Innovación (MICINN)*, 2009-2010. **40172 EUROS**.
- Metodi di integrazione delle fonti energetiche rinnovabili e monitoraggio satellitare dell'impatto ambientale/Integration methods for greenhouse energy sources and monitoring of the environmental impact. *Ente Gestore di Regione Lombardia (RL2009)*, 2011-2012.
- Interactive visualiation 3D: geometric models, graphics, learning and content generation. *Generalitat Valenciana (PROMETEOII/2014/062)*, 2014-2015. **39000 EUROS**
- GEO-C: Joint Doctorate in Geoinformatics - Enabling Open Cities. *CEE Horizon 2020 MSCA-ITN-2014, Marie Curie (642332-GEO-C)*, 2015-2018. **3600000 EUROS (Consortium), 1239365 EUROS (UJI)**.
- Erasmus Mundus Master in Geospatial Technologies. *CEE, EACEA Erasmus Mundus*, 2007-2018. **4500000 EUROS (Consortium), 1300000 EUROS (UJI)**.
- Complex space-time modeling and functional analysis for probabilistic forecast of seismic events. *Italian Ministry of Education, University and Research (MIUR-PRIN 2015)*, 2017-2019. **200000 EUROS**.

### Principal Investigator

- Investigation of spatial dimension in economical structures. *Generalitat Valenciana*, 2000. **7243 EUROS**
- Detection of features in noisy images by means of spatial point proceses. *Bancaja*, 2001-2003. **13449 EUROS**
- Modelling spatio-temporal environmental processes. *Ministerio (BFM2001-3286)*, 2002-2004. **18420 EUROS**
- Mathematical and statistical modelling of the aquifer of the Castellon Plain (Spain). *Diputación de Castellón*, 2003-2004. **12000 EUROS**
- Spatio-temporal statistical models for the evaluation and characterization of forest fires indexes in the province of Castellon (Spain). *Fundación Davalos-Fletcher de Castellón*, 2003-2004. **8000 EUROS**
- Law determination and mathematical modelling for the extraction, logistics and treatment of certain types of residuals. *I+D+I Generalitat Valenciana*, 2003-2005. **32432 EUROS**

- *The development of statistical data analysis of marked point patterns*. ESRI (Contract No. 2003C1389), 380 New York Street, Redlands, CA 92373-8100, USA, 2003-2004. **24000 EUROS**
- Spatial distribution of economical activity in the European Union (1980-2000). *Instituto Valenciano de Investigaciones Económicas (IVIE)*, 2004. **4500 EUROS**
- Theoretical formulation and practical analysis of three-dimensional spatial structures through stochastic point processes. *Generalitat Valenciana (GV04A/724)*, 2004-2005. **16400 EUROS**
- Three-dimensional marked point processes for the statistical analysis of spatial patterns. Applications to problems in astronomy and geology. *Bancaja*, 2005-2007. **22050 EUROS**
- Statistical modelling for spatio-temporal data. Applications to mortality dynamic tables and evoked potentials in Psychology and Neurophysiology. *Ministerio (MTM2004-06231)*, 2005-2007. **50000 EUROS**
- New methodological developments for space-time covariances and their applications. *Ministerio (MTM2007-62923)*, 2008-2010. **82885 EUROS**
- New families of space-time non-separable, non-stationary and anisotropic covariance functions: theory and applications. *Bancaja*, 2009-2011. **27000 EUROS**.
- Selected main problems in stochastic space-time processes. *Ministerio (MTM2010-14961)*, 2011-2013. **79500 EUROS**.
- Local second-order characteristics for space-time stochastic processes. Applications in Epidemiology and Environment. *Bancaja (PI-1B2012-52)*, 2013-2015. **23576 EUROS**.
- New families of spatio-temporal point processes with intensities driven by random fields. *Ministerio (MTM2013-43917-P)*, 2015-2016. **42874 EUROS**.
- SEnviro: Sense our ENVIRONment. *Init, UJI*, 2014. **3500 EUROS**.
- Dynamic prediction of the spatio-temporal movement in public spaces. Application to the city of Castellon (Spain). *Fundación Dávalos-Fletcher*, 2015-2016. **8000 EUROS**.
- Spatio-temporal point processes over new supports. Second-order characteristics over networks. *Bancaja (PI-1B2015-40)*, 2016-2018. **20320 EUROS**.
- New families of spatio-temporal stochastic processes linking geostatistics and point patterns. Modelling, estimation and prediction over networks and trajectories. *Ministerio (MTM2016-78917-R)*, 2017-2019. **42700 EUROS**.
- Modelling, estimation and prediction of crime data in Kennedy, Bogota. *D.C.ECSAN de la Escuela de Cadetes de Policía (2IC-FR-0002)*, 2018. **161640000 Pesos Colombianos**.
- Spatial and spatio-temporal point processes on networks. Second-order characteristics and models. *UJI (UJI-B2018-04)*, 2019-2021. **13600 EUROS**.
- New families of spatio-temporal stochastic processes over networks. *Generalitat Valenciana, Grupos de Investigación Consolidados (AICO/2019/198)*, 2019-2020. **40000 EUROS**.

#### 4. SPECIAL INVITED LECTURES

- Keynote Speaker by paper “*On the MLE for a spatial point pattern*”, 8th International Workshop on Stereology, Stochastic Geometry and Image Analysis, Sandbjerg Manor (Denmark), 1995.
- Keynote Speaker, by paper “*The pseudo-likelihood estimation method for marked Gibbs processes*”, Stochastic Geometry: Theory and Applications, Toulouse (France), 1996.
- Keynote Speaker, by paper “*A comparative study of simulation methods for marked Gibbs processes*”, 9th International Workshop on Stereology, Stochastic Geometry and Image Analysis, Comillas (Spain), 1997.
- Invited Paper “*Extensions to the variogram estimator*”, SEMSTAT, Eindhoven (The Netherlands), 1999.

- Keynote Speaker, by paper “*A comparison of model-based and design-based approaches to the analysis of replicated spatial point processes*”, 10th International Workshop on Stochastic Geometry, Stereology and Image Analysis, Calgary (Canada), 1999.
- Keynote Speaker, by paper “*Spectral tests of nonstationarity for spatial processes*”, Environmental Modeling and Statistical Analysis, Granada (Spain), 2002.
- Invited Paper “*Detection and estimation of spatial patterns in terrestrial plant communities*”, Alcalá 2nd International Conference on Mathematical Ecology, Alcalá de Henares (Spain), 2003.
- Keynote Speaker, by paper “*Spatial smoothing through a non-negative kernel family*”, IWAP-Second International Workshop in Applied Probability, University of Piraeus (Greece), 2004.
- Keynote Speaker, by paper “*New classes of covariance functions for spatio-temporal modelling*”, 2nd Spanish Workshop on Spatio-Temporal Modelling of Environmental Processes, METMA, Granada (Spain), 2004.
- Invited Paper “*Understanding three-dimensional biological images through stochastic modelling*”, Primer Congreso Conjunto de Matemáticas RSME-SCM-SEIO-SEMA (MAT.ES 2005), Valencia (Spain), 2005.
- Keynote Speaker, by paper “*Methods and models for spatio-temporal modelling*”, GRASPA, Bertinoro (Italy), 2005.
- Keynote Speaker, by paper “*Spatio-temporal georeferenced data analysis through copulas and Dagum distributions*”, Spatial Econometrics and Statistics Workshop, Toulouse (France), 2005.
- Keynote Speaker, by paper “*Space-time point process models for wildfire hazard evaluation*”, Workshop on Forest Fires and Point Processes, Toronto (Canada), 2005.
- Keynote Speaker, by paper “*Modelling space-time interactions for stochastic systems*”, New Themes and Techniques in Complex Systems. Lake District (UK), 2005.
- Keynote Speaker, by paper “*A deeper look at some properties of space-time covariance functions*”, Spanish Workshop on Spatio-Temporal Modelling of Environmental Processes, METMA, Pamplona (Spain), 2006.
- Invited Paper “*Building space-time covariance functions through quasi-arithmetic means*”, Taipei International Statistical Symposium and ICSA International Conference, Academia Sinica, Taipei (Taiwan), 2007.
- Invited Paper “*Challenging space-time complexity: a composite likelihood approach*”, 18th annual meeting of the International Environmetrics Society-TIES, Mikulov (Czech Republic), 2007.
- Invited Discussant in the invited paper meeting (IPM08): “*Recent Advances in Spatial Statistics with Environmental Applications*”, 56th Session of ISI, Lisboa (Portugal), 2007.
- Invited Paper “*The Dagum family and the mystery of its permissibility conditions*”, 7th French-Danish Workshop on Spatial Statistics and Image Analysis in Biology, Toulouse (France), 2008.
- Keynote Speaker, by paper “*Spatial and spatio-temporal dependencies: an excursus through biometrical applications*”, II Iberian Mathematical Meeting, Badajoz (Spain), 2008.
- Keynote Speaker, by paper “*Analysis of spatial and space-time stochastic dependencies: methods and applications*”, Workshop on Oceanography and Statistical and Computational Hydraulics, Santiago de Compostela (Spain), 2009.
- Keynote Speaker, by paper “*Spatial and spatio-temporal point pattern analysis. An overview and applications to forest fires*”, Workshop on Strategic Data Analysis, Santiago de Compostela (Spain), 2010.
- Invited Paper “*Composite likelihood-based estimation methods for space-time stochastic processes*”, Fifth International Workshop in Applied Probability, Madrid (Spain), 2010.
- Invited Paper “*A coherence-based measure for spatial classification*”, Fifth International Workshop in Applied Probability, Madrid (Spain), 2010.
- Invited Paper “*Spatial point pattern classification with environmental applications*”, Annual Meeting of the German Statistical Society, Nuremberg (Germany), 2010.
- Invited Paper “*Spatially correlated functional data*”, Spatial Data Methods for Environmental and Ecological Processes, Puglia (Italy), 2011.

- Invited Paper “*Space-time modelling to help risk management*”, Second Symposium on Games and Decisions in Reliability and Risk, Lake Maggiore (Italy), 2011.
- Keynote Speaker, by paper “*The problem of classification in spatial point patterns*”, 22st Colombian Statistics Symposium, Bucaramanga (Colombia), 2012.
- Keynote Speaker, by paper “*The problem of classification in spatial point patterns*”, VI International Workshop on Spatio-Temporal Modelling (METMAVI), Guimaraes (Portugal), 2012.
- Keynote Speaker, by paper “*Classification and clustering in spatial and spatio-temporal point patterns*”, Statistische Woche 2012, Vienna (Austria), 2012.
- Keynote Speaker, by paper “*Classification and clustering in spatial and spatio-temporal point patterns*”, 2nd Conference on Spatial Statistics, Ohio (USA), 2013.
- Invited Paper “*Local clustering in spatio-temporal point patterns*”, 15th Annual Conference of the International Association for Mathematical Geosciences (IAMG 2013), Madrid (Spain), 2013.
- Keynote Speaker, by paper “*Recent contributions to the analysis of spatio-temporal point patterns*”, 12th Iranian Statistical Conference, Kermanshah (Iran), 2014.
- Invited Paper “*A functional model for detecting changes in evolving shapes brain tumors*”, The 47th SIS scientific meeting of the Italian Statistical Society (SIS-2014), Cagliari (Italy), 2014.
- Keynote Speaker, by paper “*An ANOVA-type procedure for replicated spatio-temporal point patterns with environmental applications*”, Seismomatics. Towards analysis and forecasting of catastrophic events, Valparaiso (Chile), 2015.
- Invited Paper “*Spatially dependent count data prediction using a copula approach - application to rat and cockroach sightings*”, 3rd Conference on Spatial Statistics, Avignon (France), 2015.
- Invited Paper “*An ANOVA-type procedure for replicated spatio-temporal point patterns with environmental applications*”, 25th TIES Conference, Al Ain (United Arab Emirates), 2015.
- Keynote Speaker, by paper “*An ANOVA-type procedure for replicated spatio-temporal point patterns with environmental applications*”, 13th Iranian Statistical Conference, Kerman (Iran), 2016.
- Invited Paper “Peter Diggle: a pragmatic vision of spatial statistics, and the right balance between science and humanity”, Spatial Statistics, Lancaster, 2017.
- Invited Paper “*Point patterns in space and space-time: Linear models and change of support*”, Computational and Methodological Statistics (CMStatistics 2017), London, 2017.
- Invited Paper “*Linear models for complex spatial point process dependencies*”, 28th Annual Conference of the International Environmetrics Society (TIES2018). Guanajuato, Mexico, 2018.
- Invited Paper “*An ANOVA-type procedure for replicated spatial and spatio-temporal point patterns*”, Biannual Conference of the Royal Spanish Mathematical Society. Santander, 2019.
- Keynote Speaker, by paper “*Procesos estocasticos con dependencias espaciales y temporales. Prediccion de crímenes y diseño de experimentos en ingeniería*”, XII Coloquio de Estadística. Medellín, 2019.

## 5. CONFERENCE ORGANIZATION (selection since 2000)

- *First Spanish Workshop on Spatio-Temporal Modelling of Environmental Processes (METMA1)*. 28-31 October **2001**, Benicassim, Castellón (Spain).
- *ISI International Conference on Environmental Statistics and Health*. July **2003**, Santiago de Compostela (Spain).
- *International Conference on Spatial Point Processes and their Applications*. April **2004**, Castellón (Spain).
- *Second Spanish Workshop on Spatio-Temporal Modelling of Environmental Processes (METMA2)*. June **2004**, Granada (Spain).

- *International Seminar on Special Functions with a View on Building Space-Time Covariance Functions*. 24-28 April, 12-16 June **2006**, Castellon (Spain).
- *International Seminar on Copula Modelling*. July **2006**, Castellon (Spain).
- *International Workshop on Spatio-Temporal Modelling (METMA4)*. September **2008**, Algher (Sardinia, Italy).
- *International Workshop on Spatio-Temporal Modelling (METMA6)*. September **2012**, Guimaraes (Portugal).
- *XXXIV Congreso Nacional de Estadística e Investigación Operativa (SEIO-2013)*. September **2013**, Castellón (Spain).
- *Satellite workshop of the IBC2014 on Spatio-Temporal Statistics*. July **2014**, Valencia (Spain).
- *International Workshop on Spatio-Temporal Modelling (METMA7)*. September **2014**, Turin (Italy).
- *International Workshop on Spatio-Temporal Modelling (METMA8)*. June **2016**, Valencia (Spain).
- *International Workshop on Spatio-Temporal Modelling (METMA9)*. June **2018**, Montpellier (France).
- *5th Spatial Statistics Conference*. July **2019**, Sitges, Barcelona (Spain).
- *International Workshop on Spatio-Temporal Modelling (METMA10)*. June **2020**, Lleida (Spain).

## 6. REFEREED ARTICLES

1. MONTES, F. & MATEU, J. (1996). On the MLE for a spatial point pattern. *Advances in Applied Probability (SGSA)*, **28**, 339.
2. BOIX, A., MATEU, J., JORDAN, M.M. & SANFELIU, T. (1996). A Statistical model based on multiple regression applied to the prediction of air particle concentrations in the atmosphere. *Journal of the Hungarian Meteorological Service*, **100**, 303-327.
3. PEREZ, C., ANTOLIN, C., USO, J.L. & MATEU, J. (1996). Relación entre varios factores edáficos y especies de Oligoquetos terrícolas de la Comunidad Valenciana. *Real Sociedad Española de Historia Natural (RSEHN)*, **125**.
4. MATEU, J. (1997). Methods of assessing and achieving normality applied to Environmental data. *Environmental Management*, **21**, 767-777.
5. USO, J.L., MATEU, J., KARJALAINEN, T. & SALVADOR, P. (1997). Allometric regression equations to determine aerial biomasses of mediterranean shrubs. *Plant Ecology*, **132**, 59-69.
6. USO, J.L., MATEU, J. & LOPEZ, J.A. (1997). Mathematical and Statistical formulation of an ecological model with applications. *Ecological Modelling*, **101**, 27-40.
7. JORDAN, M.M., MATEU, J. & BOIX, A. (1998). A classification of sediment types based on statistical multivariate techniques *Journal of Water, Air and Soil Pollution*, **107**, 91-104.
8. MATEU, J. & MONTES, F. (1998). Modelización de la distribución espacial de quistes en el estómago de la marsopa mediante un proceso de Gibbs. *Questio*, **22**, 175-194.
9. MATEU, J., USO, J.L. & MONTES, F. (1998). The Spatial Pattern of a Forest Ecosystem. *Ecological Modelling*, **108**, 163-174.
10. MATEU, J. & MONTES, F. (1998). A comparative study of simulation methods for marked Gibbs processes. *Advances in Applied Probability (SGSA)*, **30**, 271-294.
11. POLO, E., REYES, E., MATEU, J. & CASANOVA, C. (1998). Análisis de la relación entre morbilidad y nivel de demanda en atención primaria pediátrica: Un estudio sobre 1359 niños. *Anales Españoles de Pediatría*, **49**, 273-279.
12. POLO, E., REYES, E., SERRANO, C., MATEU, J. & CASANOVA, C. (1998). Factores familiares y nivel de demanda en atención primaria pediátrica. *Revista Española de Pediatría*, **54**, 497-505.

13. VILLACAMPA, Y., USO, J.L., MATEU, J., VIVES, F. & SASTRE, P. (1999). Generative and recognoscitive grammars of ecological models. *Ecological Modelling*, **117**, 315-332.
14. MATEU, J. & RIBEIRO, P.J. (1999). Geostatistical data versus point process data: analysis of second-order characteristics. *Quantitative Geology and Geostatistics*, **10**, 213-224.
15. JORDAN, M.M., BOIX, A., MATEU, J. & SANFELIU, T. (1999). Estudio de los niveles de partículas y dióxido de azufre en un área industrial cerámica. *Técnica Cerámica*, **268**, 1003-1007.
16. SASTRE, P., USO, J.L., VILLACAMPA, Y., MATEU, J. & SALVADOR, P. (1999). Statistical linguistic laws in ecological models. *Cybernetic Systems: An International Journal*, **30**, 697-724.
17. CORTES, M., VILLACAMPA, Y., MATEU, J. & USO, J.L. (2000). A new methodology for modelling highly structured systems. *Environmental Modelling & Software*, **15**, 461-470.
18. USO, J.L., MATEU, J. & LOPEZ, J.A. (2000). Medea: Software development for prediction of mediterranean forest degraded areas. *Advances in Engineering Software*, **31**, 185-196.
19. MATEU, J. & MONTES, F. (2000). Approximate maximum likelihood estimation for a spatial point pattern. *Questiio*, **24**, 3-25.
20. ALBERT, J.M., MATEU, J. & PERNIAS, J.C. (2000). Spatial structure analysis using planar indices. *Questiio*, **24**, 27-51.
21. DIGGLE, P.J., MATEU, J. & CLOUGH, H. (2000). A comparison between parametric and non-parametric approaches to the analysis of replicated spatial point patterns. *Advances in Applied Probability (SGSA)*, **32**, 331-343.
22. CIFRE, E., MATEU, J. & SALANOVA, M. (2000). Validación del modelo vitamínico de Warr mediante regresión no paramétrica localmente ponderada. *Psicothema*, **12**, 135-139.
23. USO, J.L., VILLACAMPA, Y., MATEU, J. & SASTRE, P. (2000). Uncertainty and complementarity principles in ecological models. *Cybernetics & Systems*, **31**, 137-159.
24. MATEU, J. (2000). Second-order characteristics of spatial marked processes with applications. *Journal of Nonlinear Analysis*, **1**, 145-162.
25. SASTRE, P., USO, J.L. & MATEU, J. (2000). Adaptation of linguistic laws to ecological models. *Kybernetes*, **29**, 1306-1323.
26. MONTES, F. & MATEU, J. (2000). Punts al pla: ordre o atzar? *Butlletí de la Societat Catalana de Matemàtiques*, **15**, 51-69.
27. MATEU, J. & MONTES, F. (2001). Likelihood inference for Gibbs processes in the analysis of spatial point patterns. *International Statistical Review*, **69**, 81-104.
28. MATEU, J. (2001). Parametric procedures in the analysis of replicated spatial point patterns. *Biometrical Journal*, **43**, 375-394.
29. USO, J.L., SASTRE, P. & MATEU, J. (2001). Syntax and first entropic approximation of L(Mt): A Language for ecological modelling. *Kybernetes*, **30 (9-10)**, 1304-1318.
30. MATEU, J. & MONTES, F. (2001). Pseudo-likelihood inference for Gibbs processes with exponential families through generalized linear models. *Statistical Inference for Stochastic Processes*, **4**, 125-154.
31. CALDUCH, M.A. & MATEU, J. (2001). Homogeneity versus inhomogeneity in spatial point processes: misfitting issues. *Portuguese Statistical Review*, **2**, 81-82.
32. ALBERT, J.M., MATEU, J. & PERNIAS, J.C. (2002). Modelling of spatial point processes derived from a sequence of auto-Poisson lattice schemes. *Environmental Modelling & Software*, **17(2)**, 105-123.
33. MATEU, J. (2002). Statistical procedures for spatial point pattern recognition. *Questiio*, **26**, 29-59.
34. MATEU, J. & LORENZO, G. (2002). Detección de rasgos en imágenes binarias mediante procesos puntuales espaciales marcados. *Questiio*, **26**, 61-85.
35. USO, J.L., MATEU, J. & PATTEN, B.C. (2002). Mathematical approach to the concept of Environment: Open Systems and Processes. *International Journal of General Systems*, **31**, 213-223.

36. MATEU, J. (2002). Recent Developments in Spatial Analysis and its Relationship to Behavioural Modelling: an Overview. *Metodología de las Ciencias del Comportamiento*, **4**(2), 339-377.
37. MATEU, J. & MONTES, F. (2002). Discussion to the paper "Spatial-Temporal Nonlinear Filtering Based on Hierarchical Statistical Models" by Irwin, Cressie & Johannesson. *Test*, **11**, 249-302.
38. MARTINEZ, F., MATEU, J. & MONTES, F. (2003). Análisis espacio-temporal el acuífero el cuaternario de Jávea. *Boletín Geológico y Minero de España*, **114** (3), 323-332.
39. MATEU, J., MONTES, F. & FUENTES, M. (2003). Recent advances in space-time statistics with applications to atmospheric data: An overview. *Journal of Geophysical Research*, **108** (D24).
40. BODAS-SALCEDO, A., LOPEZ-BAEZA, E., MARTINEZ, F., MATEU, J. & MONTES, F. (2003). Spatio-temporal modeling and prediction of solar radiation. *Journal of Geophysical Research*, **108** (D24).
41. MATEU, J. & JUAN, P. (2004). A spectral test of nonstationarity for spatial processes. *Quantitative Geology and Geostatistics*, **13**, 213-224.
42. MATEU, J., ARTES, J. & LOPEZ, J.A. (2004). Computational issues for perfect simulation in spatial point patterns. *Communications in Nonlinear Science and Numerical Simulation*, **9**, 229-240.
43. JORDAN, M.M., NAVARRO, J., GARCIA, E., MATEU, J. & JUAN, P. (2004). Spatial dynamics of soil salinity under arid and semiarid conditions: Geological and environmental implications. *Environmental Geology*, **45**, 448-456.
44. MATEU, J., MONTES, F. & PLAZA, M. (2004). The 1970 US draft lottery revisited: a spatial analysis. *Journal of The Royal Statistical Society-Series C. Applied Statistics*, **53**, 219-229.
45. GREGORI, P., van LIESHOUT, M.N.M. & MATEU, J. (2004). Mixture formulae for shot noise weighted point processes. *Statistics and Probability Letters*, **67** (4), 311-320.
46. AXIS, J. & MATEU, J. (2004). Spatio-temporal modelling of benthic biological species. *Journal of Environmental Management*, **71** (1), 67-77.
47. STOICA, R.S., MARTINEZ, V.J., MATEU, J. & SAAR, E. (2005). Detection of cosmic filaments. *Astronomy and Astrophysics*, **434**, 423-432.
48. STOICA, R.S., GREGORI, P. & MATEU, J. (2005). Simulated annealing and object point processes: tools for analysis of spatial patterns. *Stochastic Processes and Their Applications*, **115**, 1860-1882.
49. MATEU, J. & SAURA, F. (2005). Discussion to the paper "Residual analysis for spatial point processes" by Baddeley, Turner, Moller & Hazelton. *Journal of the Royal Statistical Society B*, **67**, 617-666.
50. MATEU, J. & LOPEZ, J.A. (2005). Cluster spatial point process models for cosmological applications. *Journal of Computational Methods in Sciences and Engineering*, **5** (2), 115-139.
51. USO, J.L., VIVES-MACIA, F. & MATEU, J. (2006). Regular grammars of L(Mt): A Language for ecological systems modelling (I). *Kybernetes*, **35** (6), 837-850.
52. USO, J.L., VIVES-MACIA, F. & MATEU, J. (2006). Regular grammars of L(Mt): A Language for ecological systems modelling (II). *Kybernetes*, **35** (10), 1636-1645.
53. SAURA, F. & MATEU, J. (2006). Estimating mark functions through spectral analysis for marked point patterns. *Communications in Statistics: Theory and Methods*, **35** (5), 861-886.
54. PORCU, E., GREGORI, P. & MATEU, J. (2006). Nonseparable stationary anisotropic space-time covariance functions. *Stochastic Environmental Research and Risk Assessment*, **21**, 113-122.
55. PORCU, E., MATEU, J., ZINI, A. & PINI, R. (2006). The Dagum family for spatio-temporal modelling. *Advances in Applied Probability*, **37**, 1-17.
56. COMAS, C. & MATEU, J. (2007). Modelling forest dynamics: a perspective from point process methods. *Biometrical Journal*, **49** (2), 176-196.
57. NAVARRO, J., JORDAN, M.M., MELENDEZ, I., GOMEZ, I., JUAN, P. & MATEU, J. (2007). Estimation of soil salinity in semi-arid land using a geostatistical model. *Land Degradation & Development*, **18**, 339-353.



58. YU, K., MATEU, J. & PORCU, E. (2007). A kernel-based method for nonparametric estimation of variograms. *Statistica Neerlandica*, **61** (2), 173-197.
59. HUANG, H.C., MARTINEZ, F., MATEU, J. & MONTES, F. (2007). Model comparison and selection for stationary space-time models. *Computational Statistics and Data Analysis*, **51**, 4577-4596.
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## 7. BOOKS (selection since 2000)

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## 8. SUPERVISION OF MASTER THESIS

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36. *Analysis of variance for replicated spatio-temporal point patterns*. April 2013. Author: **Jonatan González Monsalve** (University Jaume I, Castellón, Spain).
37. *Spatial patterns and irregularities of the electoral data: general elections in Canada*. March 2014. Author: **Alex Eskov** (University Jaume I, Castellón, Spain).
38. *The edges of areal units. A case study in the heterogeneous effects of assessment district edges*. March 2014. Author: **Thomas D. Buckley** (ISEGI, University of Lisbon, Portugal).
39. *Analysis of urban land use and land cover changes: a case study in Bahir Dar, Ethiopia*. March 2014. Author: **Atalel Getu** (ISEGI, University of Lisbon, Portugal).
40. *Using GIS to map the spatial and temporal occurrence of cholera epidemic in Cameroon*. March 2014. Author: **Ayuk Sally Agbor** (ISEGI, University of Lisbon, Portugal).
41. *Watershed-scale runoff routing and solute transport in a spatially aggregated hydrological framework*. March 2014. Author: **Jairo A. Torres** (IFGI, University of Muenster, Germany).
42. *Coastal vulnerability assessment model using InVEST tool due to potential sea level rise*. March 2014. Author: **Arfanara Najnin** (IFGI, University of Muenster, Germany).
43. *SDAR: A Package for Plotting and Analyzing Stratigraphy Data in R*. February 2015. Author: **John Ortiz** (IFGI, University of Muenster, Germany).
44. *Spatial analysis of crime evolution in Portugal between 1995 and 2013*. February 2015. Author: **Stjepan Rajcic** (ISEGI, University of Lisbon, Portugal).
45. *Groundwater quality, vulnerability and potential assessment of Kobo Valley development project, Ethiopia*. February 2015. Author: **Fesseha Fentahun** (ISEGI, University of Lisbon, Portugal).
46. *Parking Reservation Simulation using Changing GIS Data. The Case for UJI Campus*. February 2015. Author: **German Mendoza** (UJI, University Jaume I of Castellon, Spain).
47. *Investigating crime patterns in Egypt using crowdsourced data between 2011-2013*. February 2016. Author: **Abbas Adel Ibrahim** (IFGI, University of Muenster, Germany).
48. *Location analysis of city sections socio-demographic segmentation and restaurant potentiality estimation. Case study City of Lisbon*. February 2016. Author: **Dejan Popovic** (ISEGI, University of Lisbon, Portugal).
49. *Environmental quality of life index incorporating MCA & GIS. Case study: Lisbon Metropolitan Area, Portugal*. February 2016. Author: **David Thor Gudmundsson** (ISEGI, University of Lisbon, Portugal).
50. *Rebalancing citi bike: bicycle redistribution in New York city*. February 2016. Author: **Alexander Tedeschi** (ISEGI, University of Lisbon, Portugal).
51. *Spatio-temporal modelling of Tornados with R-INLA, at the county-level in Texas and Ocklahoma*. February 2017. Author: **Angela Afonso Rodrigues** (ISEGI, University of Lisbon, Portugal).
52. *Evaluation of a homogeneization method based on geostatistical simulation using a benchmark temperature data set*. February 2017. Author: **Julia Velastegui Caceres** (ISEGI, University of Lisbon, Portugal).
53. *Geospatial analysis of extreme weather events in Nigeria (1985 -2015) using self organizing maps*. February 2017. Author: **Adeoluwa Stephen Akande** (ISEGI, University of Lisbon, Portugal).
54. *Spatio-temporal analysis of sex-based crimes in Chicago*. February 2018. Author: **Raquel Martin** (UJI, University Jaume I of Castellon, Spain).
55. *Spatio-temporal forecasts for bike availability in dockless bike sharing systems*. February 2019. Author: **Lucas van der Meer** (IFGI, University of Muenster, Germany).
56. *Predicting soccer outcome with machine learning based on weather condition* . February 2019. Author: **Denny Asarias Palinggi** (UJI, University Jaume I of Castellon, Spain).

57. *Automatic training sample extraction from old maps for intra-annual land cover mapping at central Portugal*. February 2019. Author: **William A. Martínez-Blanco** (ISEGI, University of Lisbon, Portugal).
58. *Impact of land cover changes on carbon stock trends in Kenya using free open data*. February 2019. Author: **Nicodemus Ontweka Nyamari** (ISEGI, University of Lisbon, Portugal).
59. *Modeling malaria incidence associated with environmental risk factors in Ethiopia using the semi-parametric geographically weighted regression model*. February 2020. Author: **Berhanu Berga Dadi** (UJI, University Jaume I of Castellon, Spain).
60. *Spatio-temporal modeling of traffic risk mapping on urban road networks*. February 2020. Author: **Somnath Chaudhuri** (UJI, University Jaume I of Castellon, Spain).

## 9. SUPERVISION OF PHD THESIS

1. *Characterization and statistical modelling of atmospheric pollutants in an industrial area*. May 2001, **Sobresaliente Cum Laude**. Author: **Carlos Alvarez** (Universitat Jaume I, Castellón, Spain).
2. *Kernel smoothing: theory and applications*. October 2001, **Sobresaliente Cum Laude**. Author: **Miguel Montenegro** (Universidad Tecnológica Metropolitana, Santiago de Chile, Chile).
3. *Statistical tools for the analysis of linguistic texts*. June 2002, **Sobresaliente Cum Laude**. Author: **Patricia Sastre** (Universidad Nacional del Centro de la Provincia de Buenos Aires, Azul, Argentina).
4. *Pseudolikelihood and inhomogeneity in spatial point processes*. June 2004, **Sobresaliente Cum Laude**. Author: **María de los ángeles Calduch** (Universitat Politècnica de Valencia, Valencia, Spain).
5. *Statistical analysis of spatial data: Computational analysis of Besag's methodology and its applications to economy*. June 2004, **Sobresaliente Cum Laude**. Author: **Miguel Albert** (Universitat Jaume I, Castellón, Spain).
6. *Geostatistica spazio-temporale: nuove classi di covarianza, variogramma e densità spettrali/Spatio-temporal geostatistics: new classes of covariance, variogram and spectral densities*. September 2004, **Sobresaliente Cum Laude**. Author: **Emilio Porcu** (Università degli Studi di Milano-Bicocca, Italy).
7. *Spectral analysis for geostatistics. Testing spatial independence and stationarity*. June 2005, **Sobresaliente Cum Laude**. Author: **Pablo Juan** (Universitat Jaume I, Castellón, Spain).
8. *Features detection in noisy images. An approximation by LISA functions in spatial point processes*. June 2005, **Sobresaliente Cum Laude**. Author: **Gil Lorenzo** (Universitat Jaume I, Castellón, Spain).
9. *Modeling the space-time covariance function. Analysis and applications*. February 2008, **Sobresaliente Cum Laude**. Author: **Francisco Martínez** (Universitat de Valencia, Valencia, Spain).
10. *Geostatistical analysis of functional data*. July 2009, **Sobresaliente Cum Laude**. Author: **Ramón Giraldo** (Universitat Politècnica de Catalunya, Barcelona, Spain).
11. *Spatio-temporal modeling of environmental processes derived from the economic activity*. May 2010, **Sobresaliente Cum Laude**. Author: **Gema Fernández-Avilés** (Universidad de Castilla La Mancha, Toledo, Spain).
12. *Análisis geoestadístico espacio-tiempo basado en distancias y splines con aplicaciones*. September 2012, **Sobresaliente Cum Laude**. Author: **Carlos Melo** (Universitat de Barcelona, Spain).
13. *Nueva herramienta para la gestión de las aguas subterráneas en acuíferos costeros. Volumen ecológico de remediación*. January 2013. Autor: **Arianna Renau** (Universitat Jaume I, Castellón, Spain).

14. *Modelos lineales generalizados geoestadísticos basados en distancias*. July 2013, **Sobresaliente Cum Laude**. Autor: **Oscar Melo** (*Universitat de Barcelona, Spain*).
15. *Análisis espacio-temporal de plagas urbanas*. December 2013, **Sobresaliente Cum Laude**. Autor: **Ibon Tamayo** (*Universidad de Alcala de Henares, Spain*).
16. *Mixed models and point processes*. December 2013, **Sobresaliente Cum Laude**. Autor: **Laura Serra** (*Universitat de Girona, Spain*).
17. *Modelling, estimation and applications of second-order spatio-temporal characteristics of point processes*. March 2014, **Sobresaliente Cum Laude**. Autor: **Francisco J. Rodríguez Cortés** (*Universitat Jaume I, Castellón, Spain*).
18. *Mathematical methods to predict the dynamic shape evolution of cancer growth based on spatio-temporal Bayesian and geometrical models*. January 2016, **Sobresaliente Cum Laude**. Autor: **Iulian Vlad** (*Universitat Jaume I, Castellón, Spain*).
19. *Spatial statistical modelling of rat sightings*. January 2016, **Sobresaliente Cum Laude**. Autor: **Carlos Ayyad** (*Universitat Jaume I, Castellón, Spain*).
20. *Nonparametric inference for first-order characteristics of spatial and spatio-temporal point processes*. February 2016, **Sobresaliente Cum Laude**. Autor: **Isabel Fuentes** (*Universidad de Santiago de Compostela, Spain*).
21. *Spatio-temporal sampling design for functional geostatistics*. May 2016, **Sobresaliente Cum Laude**. Autor: **Martha Bohorquez** (*Universidad Nacional de Colombia, Bogota, Colombia*).
22. *Mathematical developments on isotropic positive definite functions on spheres*. May 2017, **Sobresaliente Cum Laude**. Autor: **Ahmed Arafat** (*Universitat Jaume I, Castellón, Spain*).
23. *Spatio-temporal analysis of variance for replicated point patterns*. February 2018, **Sobresaliente Cum Laude**. Autor: **Jonatan Gonzalez** (*Universitat Jaume I, Castellón, Spain*).
24. *Spatial and spatio-temporal point patterns on linear networks*. November 2018, **Sobresaliente Cum Laude**. Autor: **Mehdi Moradi** (*Universitat Jaume I, Castellón, Spain*).
25. *Spatial modelling of air pollution for open smart cities*. November 2018, **Sobresaliente Cum Laude**. Autor: **Shivam Gupta** (*IFGI, University of Muenster, Germany*).
26. *Analysing conditional independence in multivariate spatial data and extensions to space-time: A unifying graphical model approach based on partial marked point process characteristics*. September 2019, **Sobresaliente Cum Laude**. Autor: **Matthias Eckardt** (*Humboldt-Universität zu Berlin, Germany*).

**In progress during 2020:**

1. *New anisotropic families of log-Gaussian Cox processes*. Expected April 2020. Autor: **Fariba Nasirzadeh** (*Shiraz University, Iran*).

## 10. PROFESSIONAL AFFILIATIONS

- Sociedad Española de Estadística e Investigación Operativa / *Spanish Society of Statistics and Operations Research* (SEIO) since 1996.
- Bernoulli Society for Mathematical Statistics and Probability (International Statistical Institute) since 1993.
- New York Academy of Sciences since 1997.
- Elected member of ISI. Nominated by: Dave Holland, Abdel El-shaarawi, Jim Zidek, Alan Gelfand, Wenceslao González-Manteiga. January 2004.
- Fellow of Wessex Institute in Great Britain since July 2004.
- *Spanish National Agency for Research Evaluation* (ANEP) since 2003.



- External Consultant de ESRI (GIS and Mapping Software) since april 2003. ESRI is located in Redlands, California, which is approximately 60 miles east of downtown Los Angeles. 380 New York Street, Redlands, CA 92373-8100.
- Fellow of the Royal Statistical Society (RSS) since June 2016.

## 11. REVIEWING

Annals of Applied Statistics, Biometrical Journal, Biometrics, Biometrika, Communications in Statistics, Computational Statistics and Data Analysis, Environmetrics, Journal of the American Statistical Association, Journal of Multivariate Analysis, Journal of the Royal Statistical Society A, B, C, Pattern Recognition Letters, Scandinavian Journal of Statistics, Stochastic Environmental Research and Risk Assessment, Test.

## 12. GUEST EDITOR OF SPECIAL ISSUES

- Guest Editor of the special issue in *Journal of Geophysical Research* entitled “*Application of Recent Advances in Space-Time Statistics to Atmospheric Data*”, July 2003.
- Guest Editor of the special issue in *Boletín Geológico Minero* entitled “*Geoestadística y Modelos Matemáticos en Hidrogeología*”, July-September 2003.
- Guest Editor of the special issue in *Environmetrics* entitled “*Spatio-temporal stochastic modelling: environmental and health processes*”, 2010.
- Guest Editor of the special issue in *Stochastic Environmental Research and Risk Assessment* entitled “*Statistics for space-time environmental problems*”, 2010.
- Guest Editor of the special issue in *Journal of Environmental Statistics* entitled “*Statistical modelling of spatio-temporal environmental phenomena*”, 2012.
- Guest Editor of the special issue in *Journal of Spatial Statistics* entitled “*Spatio-temporal stochastic modelling of environmental hazards*”, 2015.
- Guest Editor of the special issue in *Stochastic Environmental Research and Risk Assessment* entitled “*Advances in spatial functional analysis*”, 2016.
- Guest Editor of the special issue in *Journal of Agricultural, Biological and Environmental Statistics* entitled “*Space-time analysis of catastrophes*”, 2016.
- Guest Editor of the special issue in *Journal of Spatial Statistics* entitled “*Space-time statistical methods for environmental and biometrical problems*”, 2017.
- Guest Editor of the special issue in *Journal of Spatial Statistics* entitled “*Towards Spatial Data Science*”, 2019.

## 13. EDITOR-IN-CHIEF AND ASSOCIATE EDITOR

- *Elected member of The International Statistical Institute (ISI)*. Since January 2004.
- *Fellow of Wessex Institute of Technology* in Great Britain. Since July 2004.
- *Fellow of the Royal Statistical Society (RSS)*. Since June 2016.
- *Associate Editor of The Journal of Environmental Statistics*. Since September 2008.
- *Associate Editor of Advances and Applications in Statistical Sciences (AISS)*. Since September 2008.
- *Associate Editor of Environmetrics*. Since January 2009.

- *Associate Editor* of **Stochastic Environmental Research and Risk Assessment (SERRA)**. Since January 2009.
- *Associate Editor* of **Journal of Agricultural, Biological, and Environmental Statistics (JABES)**. Since January 2011.
- *Associate Editor* of **Journal of Spatial Statistics**. Since October 2011.
- *Associate Editor* of **Colombian Journal of Statistics**. Since June 2015.
- *Associate Editor* of **International Statistical Review (ISR)**. Since April 2016.
- *Associate Editor* of **Journal of the Royal Statistical Society C (JRSSC)**. Since January 2017.
- *Associate Editor* of **Journal of the Iranian Statistical Society (JIRSC)**. Since January 2017.
- *Member of the Executive Committee* of **SEIO (Spanish Society of Statistics and Operations Research)**. 2009-2012.
- Editor of Section entitled “*Extremes and Environmental Risk*” of Second Edition of **Encyclopedia of Environmetrics**, Wiley. January 2011.
- *President of Board of Editors* of **METMA Workshops**.
- 2011 Election of *Board of Directors* of the International Environmetrics Society (TIES) in the position of **Secretary**, 2011-2014.
- Co-director of the *Erasmus Mundus Master in Geospatial Technologies*. Funded by European Commission. Consortium formed by Spain, Portugal and Germany.
- *Member of the Panel of Reviewers* 2000-2019: **ANEP**, Spanish National Agency for the Evaluation of Research Projects.
- *Member of the Panel of Reviewers* 2011-2018: **PCCA** call from The Executive Agency for Higher Education, Research, Development and Innovation Funding (<http://www.uefiscdi.gov.ro>). Ministry of National Education, Romania.
- *Member of the Panel of Reviewers* 2012-2018: **PRIN** call from MIUR (Ministry of Education, University and Research of Italy). Web: <https://referee.cineca.it>
- *Member of the Panel of Reviewers* 2015-2018: **FONDECYT** call from CONICYT (Chilean National Science and Technology Commission). Web: <https://evalfondecyt.conicyt.cl>
- *Member of the Panel of Reviewers* 2018: **HFRI**, 1st call for HFRI Research projects (Ref. No 500/15.12.2017), Hellenic Republic, Ministry of Education, Research and Innovation. <https://apps.gov.gr/minedu/elidek-dep/evaluation/>.
- *Member of the Panel of Reviewers* 2019-2021: **DEVA-AAC, Evaluación y Acreditación de la Agencia Andaluza del Conocimiento**.
- Director of the Unit *Eurocop: Statistical Modelling of Crime Data*, based in the Department of Mathematics, University Jaume I of Castellon. Web: <http://www.catedraeurocop.uji.es/>. Starting date: June 2014.
- *Chair of the Committee* of **The Abdel El-Shaarawi Early Investigator (AEEI) Award from TIES**. 2018, 2019. [TIES-AEEI web site](#).