

**DEPARTAMENTO DE**  
**ESTADISTICA**

## **DEPARTAMENTO DE ESTADISTICA**

### **Áreas de conocimiento:**

- ESTADISTICA E INVESTIGACION OPERATIVA
- FUNDAMENTOS DEL ANALISIS ECONOMICO

## **ÁREA DE CONOCIMIENTO: ESTADISTICA E INVESTIGACION OPERATIVA**

### **Actividades de investigación**

#### **Tesis Doctorales**

- Adopción de las normas internacionales de información financiera por los grupos cotizados españoles: impacto y factores determinantes  
*Autores:* ALEDO, J.  
*Director:* MARIN, J.M.  
*Año:* 2009
- Bayesian Modelling of Stochastic Processes in Teletraffic and Finance  
*Autores:* RAMÍREZ, J.  
*Director:* LILLO, R. E. ; WIPER, M. P.  
*Año:* 2009
- Contributions to the problem of cluster analysis  
*Autores:* VILADOMAT, J.  
*Director:* PEÑA, D. ; PRIETO, F. J.  
*Año:* 2009
- Dynamic interest-rate modelling in Incomplete Markets  
*Autores:* PÉREZ, J.  
*Director:* NOGALES, F. J. ; (CANCELADO) STUTE, W.  
*Año:* 2009
- Marginal Productivity Index Policies for Dynamic Priority Allocation in Restless Bandit Models  
*Autores:* JACKO, P.  
*Director:* NIÑO, J.  
*Año:* 2009
- Stochastic orderings and aging notions based on percentile residual life functions  
*Autores:* FRANCO, A. M.  
*Director:* LILLO, R. E. ; ROMO, J.  
*Centro donde se presentó:* Facultad de Ciencias Sociales y Jurídicas  
*Año:* 2009

## **Publicaciones y actividades de difusión de resultados**

### **Publicaciones en revistas científicas nacionales**

- ALBARRAN, I.; ALONSO, P. J. ; BOLANCE, C.  
A comparison of the Spanish, the French and the German valuation Scales to Measure Dependency and Public Support for People with Disabilities , *Revista Española de Salud Pública*, Vol. 83, Núm. 3, 2009, pp. 379-392, ESPAÑA.
- HERRADOR, M.; MORALES, D.; ESTEBAN, M.D.; SANCHEZ, A.; SANTAMARÍA, L.; SANTAMARÍA, L.; MARHUENDA, Y.; PEREZ, A.; MOLINA, I. ; PRATESI, M.  
Estimadores de áreas pequeñas basados en modelos para la Encuesta de Población Activa, *Estadística española*, Vol. 51, 2009, pp. 133-172, ESPAÑA.
- MOLINA, I.  
Comments on: Goodness-of-fit tests in mixed modes , *TEST*, Vol. 18, Núm. 2, 2009, pp. 244-247, ESPAÑA.
- PEÑA, D. ; ALVAREZ, A.  
Coments on testing for the Existence of Cluster by Fuentes and Casella , *Statistics and Operations Research Transactions*, Núm. 33, 2009, pp. 153-158, ESPAÑA.
- ROMERA, M. R. ; MOLANES, E.M.  
Copulas in Finance and Insurance, *Revista de economía financiera*, 2009, ESPAÑA.

### **Publicaciones en revistas científicas internacionales**

- Albareda-Sambola, M. ; ALONSO, A.; MOLINA, E. ; SIMON, C.  
VARIABLE NEIGHBORHOOD SEARCH FOR ORDER BATCHING IN A WAREHOUSE , *ASIA-PACIFIC JOURNAL OF OPERATIONAL RESEARCH*, Vol. 26, Núm. 5, 2009, pp. 655-683.
- ALBARRAN, I.; ALONSO, P. J.  
Dependent persons in Spain: Estimation of the number and costs for their care , *Estudios de Economía*, Vol. 36, Núm. 2, 2009, pp. 127-163, CHILE.
- ALBARRAN, I.; ALONSO, P. J.  
Analizan las características de la población dependiente española con derecho a ayudas, *Revista de la Sociedad Iberoamericana de Información Científica (SIIC)* , 2009, ARGENTINA.
- ALBARRAN, I.; AYUSO, M.  
The Mediterranean Zone: Insurance Markets?Current Status and Prospects for the Future, *The Journal of Insurance & Risk Management*, 2009, TAILANDIA.
- ARRIBAS, A.; METZLER, D.; PLOUHINEC, J.L.  
Statistical alignment with a sequence evolution model allowing rate heterogeneity along the sequence, *IEEE Transactions on Computational Biology and Bioinformatics*, Vol. 6 (2), 2009, pp. 281-295, ESTADOS UNIDOS DE AMERICA.
- AUSIN, M. C. ; WIPER, M. P. ; LILLO, R. E.  
Bayesian estimation of finite time ruin probabilities, *Applied Stochastic Models in Business and Industry*, Vol. 25, 2009, pp. 787-805, REINO UNIDO.

- AVELINO, C.P.; MOGUERZA, J.M.; OLIVARES, A.; PRIETO, F. J.  
Combining and scaling descent and negative curvature directions, online publication, DOI: 10.1007/S10107-009-0305-6, *Mathematical Programming*, 2009.
- BAILLO, A. ; GRANE, A.  
Local linear regression for functional predictor and scalar response , *Journal of Multivariate Analysis*, Vol. 100, Núm. 1, 2009, pp. 102-111, ESTADOS UNIDOS DE AMERICA.
- BAILLO, A. ; MOLINA, I.  
Mean-squared errors of small-area estimators under a unit-level multivariate model, *Statistics (Berlin)*, Vol. 43, Núm. 6, 2009, pp. 553-569, HOLANDA.
- BEN OMRANE, W.; HEINEN, A.J.  
Is there any common knowledge news in the Euro/Dollar market?, *International Review of Economics and Finance*, Vol. 18, Núm. 4, 2009, pp. 656-670, REINO UNIDO.
- BOJ, E.; CLARAMUNT, M.; GRANE, A.; FORTIANA, J.  
Projection error term in Gower's interpolation , *Journal of Statistical Planning and Inference*, Vol. 139, 2009, pp. 1867-1878, HOLANDA.
- BRETO, C.; HE, D.; IONIDES, E.L.; KING, A.A.  
TIME SERIES ANALYSIS VIA MECHANISTIC MODELS , *ANNALS OF APPLIED STATISTICS*, Vol. 3, Núm. 1, 2009, pp. 319-348.
- DELGADO, D.; FAGERTUN, J.; ERSBOLL, B.; SUKNO, F.N.; FRANGI, A.F.  
Similarity-based Fisherfaces, *Pattern Recognition Letters*, Vol. 30, Núm. 12, 2009, pp. 1110-1116, REINO UNIDO.
- DEMIGUEL, A.V.; GARLAPPI, L.; NOGALES, F. J. ; UPPAL, R.  
A Generalized Approach to Porfolio Optimization: Improving Performance By Constraining Portfolio Norms, *Management Science*, Vol. 55, Núm. 5, 2009, pp. 798-812, ESTADOS UNIDOS DE AMERICA.
- DURBAN, M. L. ; UGARTE, M.D.; FERNANDEZ, A.; GOICOA, T.  
Spline smoothing in small area trend estimation and forecasting , *Computational statistics & data analysis*, Vol. 53, 2009, pp. 3616-3629, HOLANDA.
- FLORES, R.J.; FOOTE, R.M.  
Strongly closed subgroups of finite groups, *Advances in mathematics (New York. 1965)*, Vol. 222, Núm. 2, 2009, pp. 453-484, ESTADOS UNIDOS DE AMERICA.
- GONZALEZ, I. M. ; SANCHEZ, I.  
On-line evaluation of the stability of an inspection process, *Applied Stochastic Models in Business and Industry*, Vol. 25, 2009, pp. 719-736, REINO UNIDO.
- GONZALEZ, I. M. ; SANCHEZ, I.  
Capability indices and nonconforming proportion in univariate and multivariate processes, *The International Journal of Advanced Manufacturing Technology*, Vol. 44, 2009, pp. 1036-1050.
- GONZALEZ, M. ; BARBOSA, S.M.; ALONSO, A.M.  
Model-based clustering of Baltic sea-level , *APPLIED OCEAN RESEARCH*, Vol. 31, Núm. 1, 2009, pp. 4-11.
- HOBZA, T.; MOLINA, I. ; MORALES, D.  
Multi-sample Renyi test statistics , *Brazilian Journal of Probability and Statistics*, Vol. 51, 2009, pp. 133-172, BRASIL.

- JIMENEZ, R.J.; LUGO, H.; SAN MIGUEL, M.  
Gradual learning and the evolution of cooperation in the spatial continuous prisoner?s dilemma, *European Physical Journal B*, Vol. 71, 2009, pp. 273-280, ALEMANIA.
- JIMENEZ, R.J.; SHAO, Y.  
Limits theorems for o-divergences based on k-spacings, *Communications in statistics. Theory and methods*, Vol. 38, 2009, pp. 695-710, ESTADOS UNIDOS DE AMERICA.
- LOPES MOREIRA, M.H.  
Wavelet-based detection of outliers in financial time series , *Economics Bulletin*, Vol. 29, 2009, pp. 265-276.
- LOPES MOREIRA, M.H.; VORSATZ, M.  
Price manipulation in an experimental asset market , *European Economic Review*, Vol. 53, 2009, pp. 327-342, HOLANDA.
- LOPEZ, S. ; ROMO, J.  
On the Concept of Depth for Functional Data , *Journal of the American Statistical Association*, Vol. 104, Núm. 486, 2009, pp. 718-734, ESTADOS UNIDOS DE AMERICA.
- MARTIN, N.; PARDO, L.  
On the asymptotic distribution of cook?s distance in logistic regression models, *Journal of applied statistics*, Vol. 36, 2009, pp. 1119-1146, REINO UNIDO.
- MOLANES, E.M.; VAN KEILEGOM, I.; VERAVERBEKE, N.  
Empirical Likelihood for Non-Smooth Criterion Functions, *SCANDINAVIAN JOURNAL OF STATISTICS* , Vol. 36, Núm. 3, 2009, pp. 413-432, DINAMARCA.
- MOLINA, I.  
Uncertainty under a multivariate nested-error regression model with logarithmic transformation , *Journal of Multivariate Analysis*, Vol. 100, Núm. 5, 2009, pp. 963-980, ESTADOS UNIDOS DE AMERICA.
- MOLINA, I. ; SALVATI, N.; PRATESI, M.  
Bootstrap for estimating the MSE of the Spatial EBLUP , *Computational statistics*, Vol. 24, Núm. 3, 2009, pp. 441-458, ALEMANIA.
- NOGALES, F. J. ; DE MIGUEL, V.  
Portfolio Selection with Robust Estimation, *OPERATIONS RESEARCH*, Vol. 57, Núm. 3, 2009, pp. 560-577.
- PARDO, L.; MARTIN, N.  
Homogeneity/Heterogeneity Hypotheses for Standardized Mortality Ratios Based on Minimum Power-divergence Estimators , *Biometrical Journal* , Vol. 51, Núm. 5, 2009, pp. 819-836, ALEMANIA.
- PELLEGRINI S. ; RUIZ, E. ; ESPASA, A.  
Conditionally heteroscedastic unobserved component models and their reduced form, on line publication DOI: 10.1016/j.econlet.2009.12034, *Economics letters*, 2009, HOLANDA.
- PEÑA, D.  
Dimension reduction in time series and the dynamic factor model, *Biometrika*, Vol. 96, Núm. 2, 2009, pp. 494-496.

- PEÑA, D. ; CAIADO, J.; CRATO, N.  
Comparison of time series with unequal lengths , *Communications in statistics. Simulation and computation*, Vol. 3, Núm. 38, 2009, pp. 527-540, ESTADOS UNIDOS DE AMERICA.
- PEÑA, D. ; MULER, N.; YOHAI, V.  
Robust estimation for ARMA models , *ANNALS OF STATISTICS*, Vol. 2, Núm. 37, 2009, pp. 816-840, ESTADOS UNIDOS DE AMERICA.
- PEÑA, D. ; VILADOMAT, J.  
Comments on invariante coordinate selection, *Applied statistics*, Núm. 71, 2009, pp. 3-58, REINO UNIDO.
- PEÑA, D. ; ZAMAR, R.; YAN, G.  
Bayesian like lihood robustness in linear models , *Journal of Statistical Planning and Inference*, Núm. 139, 2009, pp. 2196-2207, HOLANDA.
- PLOUHINEC, J.L.; METZLER, D.; ARRIBAS, A.  
Statistical Alignment with a Sequence Evolution Model Allowing Rate Heterogeneity along the Sequence , *IEEE Transactions on Computational Biology and Bioinformatics*, Vol. 6, Núm. 2, 2009, ESTADOS UNIDOS DE AMERICA.
- PRIETO, F. J. ; CONEJO, A.  
Comments on: On a mixture of the fix-and-relax coordination and Lagrangean substitution schemes for multistage stochastic mixed integer programming, *Top (Madrid)*, Vol. 17, Núm. 1, 2009, pp. 37-39, ALEMANIA.
- ROMO, J. ; FRANCO, A. M. ; LILLO, R. E. ; SHAKED, M.  
Percentile residual life orders, *Applied Stochastic Models in Business and Industry*, 2009, REINO UNIDO.
- ROMO, J. ; LOPEZ, S.; TORRENTE, A.  
Robust depth-based analysis of microarray data, *Biostatistics*, 2009, REINO UNIDO.
- TENA. J.; ESPASA, A. ; PINO, G.  
Forecasting spanish inflation using the maximum disaggregation level by sectors and geographical areas, online publication. DOI: 10.1177/0160017609336629, *International Regional Science Review*, 2009.
- TENA. J.; TREMAYNE, A.R.  
Modelling monetary transmission in UK manufacturing industry , *Economic modelling*, Vol. 26, Núm. 5, 2009, pp. 1053-1066, REINO UNIDO.

## Libros

- FRANCO, A. M.  
Stochastic orderings and aging notions based on percentile residual life functions, ESPAÑA, 2009.

## Colaboraciones en obras colectivas

- ALBARRAN, I.; ALONSO, P. J. ; FAJARDO, M.A.  
*Discapacidad, dependencia y empleo*, en: Ensayos sobre Economía, Discapacidad y Empleo, Delta publicaciones, ESPAÑA, pp. 23-55, 2009.

- GRANE, A.; LOPES MOREIRA, M.H.  
*Outliers and the estimation of minimum capital risk requirements* , en: Investigaciones en Seguros y Gestión de Riesgos, Fundacion MAPFRE, ESPAÑA, pp. 541-546, 2009.
- NIÑO, J.  
*Stochastic scheduling* , en: Encyclopedia of Optimization, SPRINGER, pp. 3818-3824, 2009.

## Documentos de trabajo

- ALEDO, J.; GARCIA, F.; MARIN, J.M.  
Firm-specific factors influencing the selection of accounting options provided by the IFRS: empirical evidence from Spanish market , *Documento de trabajo N. 0926. Banco de España*, 2009.
- ALONSO, A.M.; CASADO, D.; ROMO, J.  
Classification of functional data: a weighted distance approach, *UC3M Working papers. Statistics and Econometrics 09-15* UNIVERSIDAD CARLOS III DE MADRID , 2009.
- ALONSO, P. J. ; ALBARRAN, I.  
Private Long Term Care Insurance: Theoretical Approach and Results Applied to the Spanish Case, *WP Alcamentos N. 0902. Departamento de Estadistica, Estructura Economica y O.E.I* UNIVERSIDAD DE ALCALA DE HENARES , 2009.
- ALVA, K.P.; ROMO, J. ; RUIZ, E.  
Modelling intra-daily volatility by functional data analysis: an empirical application to the spanish stock market, *UC3M Working Paper. Statistics and Econometrics Series 09-28-09* UNIVERSIDAD CARLOS III DE MADRID , 2009.
- ALVAREZ, A.; PEÑA, D.  
Recombining dependent data: an Order Statistics, *UC3M Working papers. Statistics and Econometrics 09-26* UNIVERSIDAD CARLOS III DE MADRID , 2009.
- BADAGIAN, A.; KAISER, R. ; PEÑA, D.  
Time series segmentation by Cusum, AutoSLEX and AutoPARM methods, *UC3M Working papers. Statistics and Econometrics 09-25* UNIVERSIDAD CARLOS III DE MADRID , 2009.
- BERMEJO, M.A.; PEÑA, D.; SANCHEZ, I.  
Graphical identification of TAR models, *UC3M Working papers. Statistics and Econometrics 09-23* UNIVERSIDAD CARLOS III DE MADRID , 2009.
- CAÑADA, H.; ROMERA, M. R.  
Controlled diffusion processes with markovian switchings for modeling dynamical engineering systems , *WP 09-37(14) Statistics and Econometrics Series* UNIVERSIDAD CARLOS III DE MADRID , 2009.
- CASAS, O. J. ; ROMERA, M. R.  
The international stock pollutant control: a stochastic formulation , *WP 09-08(04) Statistics and Econometrics Series* UNIVERSIDAD CARLOS III DE MADRID , 2009.
- CASAS, O. J. ; ROMERA, M. R.  
Controlling the international stock pollutant with policies depending on target values , *UC3M Working papers. Statistics and Econometrics 09-19* UNIVERSIDAD CARLOS III DE MADRID , 2009.
- GRANE, A.  
Exact goodness-of-fit tests for censored data, *UC3M Working Paper. Statistics and Econometrics 09-30-10*, 2009.

- GRANE, A.; VEIGA, M.H.  
Wavelet-based detection of outliers in volatility models, *UC3M Working papers. Statistics and Econometrics 09-03* UNIVERSIDAD CARLOS III DE MADRID , 2009.
- JACKO, P.; NIÑO, J.  
An index for dynamic product promotion and the knapsack problem for perishable items, *UC3M Working Paper. Statistics and Econometrics Series 09-31-11* UNIVERSIDAD CARLOS III DE MADRID , 2009.
- JIMENEZ, R.J.; ROMERA, M. R.  
Procesos estocásticos con aplicaciones al ámbito empresarial , *OpenCourseWare- Universia*, 2009.
- LEE, D.-J.; DURBAN, M. L.  
P-spline anova-type interaction models for spatio-temporal smoothing, *UC3M Working Paper. Statistics and Econometrics 09-33* UNIVERSIDAD CARLOS III DE MADRID , 2009.
- LETON, E.; MOLANES, E.M.  
Adjusted empirical likelihood estimation of the youden index and associated threshold for the bigamma model , *UC3M Working papers. Statistics and Econometrics 09-07* UNIVERSIDAD CARLOS III DE MADRID , 2009.
- LOPES MOREIRA, M.H.; RAMOS, S.  
Risk factors in oil and gas industry returns: international evidence , *WP 09-69 (20) Statistics and Econometrics Series* UNIVERSIDAD CARLOS III DE MADRID , 2009.
- MARTIN, N.; LI, Y.  
A new class of minimum power divergence estimators with applications to cancer surveillance, *Harvard University Biostatistics Working Paper Series*, 2009.
- MAYORDOMO, S.; PEÑA, J. I. ; ROMO, J.  
Are There Arbitrage Opportunities in Credit Derivatives Markets? A New Test and an Application to the Case of CDS and ASPs, *UC3M Working papers. Business Economics 09-06* UNIVERSIDAD CARLOS III DE MADRID , 2009.
- MOLINA, I. ; RAO, J.N.K.  
Small area estimation on poverty indicators, *UC3M Working papers. Statistics and Econometrics 09-05* UNIVERSIDAD CARLOS III DE MADRID , 2009.
- PEÑA, D. ; ALVAREZ, A.  
Recombining dependent data: an order statistics approach , *Statistics and Econometrics Series WP09-85(26* UNIVERSIDAD CARLOS III DE MADRID , 2009.
- PEÑA, D. ; BADAGIAN, A.; KAISER, R.  
Time series segmentation by cusum, autoslex and autoparm methods , *Statistics and Econometrics Series WP09-80(25* UNIVERSIDAD CARLOS III DE MADRID , 2009.
- PEÑA, D. ; BERMEJO, M.A.; SANCHEZ, I.  
Graphical identification of tar models , *Statistics and Econometrics Series WP09-77(23* UNIVERSIDAD CARLOS III DE MADRID , 2009.
- PEÑA, D. ; GIULIODORI, M.A.; LILLO, R. E.  
Clustering and Classifying images with local and global variability, *Statistics and Econometrics Series WP09-01(01* UNIVERSIDAD CARLOS III DE MADRID , 2009.
- PEÑA, D. ; MOLINA, I. ; PEREZ, B.  
Robust estimation in linear regression models with fixed effects , *Statistics and Econometrics Series WP09-88(27* UNIVERSIDAD CARLOS III DE MADRID , 2009.

- PEÑA, D. ; PRIETO, F. J. ; VILADOMAT, J.  
Eigenvectors of a Kurtosis matrix as interesting directions to reveal cluster structure , *Statistics and Econometrics Series WP09-42(16)* UNIVERSIDAD CARLOS III DE MADRID , 2009.
- PEÑA, D. ; VILADOMAT, J. ; ZAMAR, R.  
Nearest-neighbours median cluster algorithm , *Statistics and Econometrics Series WP09-43(17)* UNIVERSIDAD CARLOS III DE MADRID , 2009.
- RAMÍREZ, J. ; LILLO, R. E. ; WIPER, M. P.  
Non-identifiability of the two state Markovian Arrival process, *UC3M Working papers. Statistics and Econometrics 09-21* UNIVERSIDAD CARLOS III DE MADRID , 2009.
- TORRADO, N.; LILLO, R. E. ; WIPER, M. P.  
On the Conjecture of Kochar and Korwar, *UC3M Working Paper. Statistics and Econometrics 09-21* UNIVERSIDAD CARLOS III DE MADRID , 2009.
- VAZ PEREIRA, A.A.  
The econometrics of randomly spaced financial data: a survey, *UC3M Working papers. Statistics and Econometrics* UNIVERSIDAD CARLOS III DE MADRID , 2009.
- VILLA, G.; MOLINA, I. ; FRIED, R.  
Modelling attendance at Spanish professional football league , *WP 09-16 (06) Statistics and Econometrics Series*, 2009.

## Ponencias y Comunicaciones a congresos

- ALBARRAN, I.; ALONSO, P. J.  
*La atención a la dependencia en España: alcance, costes y retos*, II Congreso Ibero de Actuarios, BILBAO, ESPAÑA, 2009.
- ALBARRAN, I.; ALONSO, P. J. ; FAJARDO, M.A.  
*La contratación de las personas con discapacidad en España: situación actual y tendencias de futuro* , XXIII Reunión anual ASEPELT, Covilhá, PORTUGAL, 2009.
- ALBARRAN, I.; ALONSO, P. J. ; MARTINEZ, A.  
*Los efectos de la inversión pública en I+D+i sobre el crecimiento económico para un conjunto de 15 países de la Unión Europea*, XXIII Reunión anual ASEPELT, Covilhá, PORTUGAL, 2009.
- ALONSO, A.M.  
*Técnicas para el análisis de series temporales medioambientales* , Encuentro interconsolidar GRACCIE & i-Math, SANTANDER, ESPAÑA, 2009.
- ALONSO, A.M.; BENAYAS, J.; GARCIA, D.; JUSTEL, A.  
*Analisis de indicadores de sostenibilidad mediante técnicas de agrupación de series temporales*, XXXI Congreso Nacional de Estadística e Investigación Operativa, MURCIA, ESPAÑA, 2009.
- ALONSO, A.M.; GARCIA, A.  
*A time series bootstrap procedure for interpolation intervals* , XXXI Congreso Nacional de Estadística e Investigación Operativa, MURCIA, ESPAÑA, 2009.
- ALONSO, A.M.; VILAR-FERNÁNDEZ, J.A.; VILAR-FERNANDEZ, J.M.  
*Nonlinear time series clustering based on nonparametric forecast densities*, XII Encuentro de Economía Aplicada, MADRID, ESPAÑA, 2009.

- ARRIBAS, A.; MEZA, C.  
*New challenges in semiparametric nonlinear mixed model* , XI Congreso Latinoamericano de Probabilidad y Estadistica Matematica, CLAPEM, Naiguatá, VENEZUELA, 2009.
- AUSIN, M. C. ; LILLO, R. E. ; WIPER, M. P.  
*Bayesian estimation of finite ruin probabilities* , XXX Congreso Nacional de Estadistica e Investigacion Operativa, MURCIA, ESPAÑA, 2009.
- AUSIN, M. C. ; LILLO, R. E. ; WIPER, M. P.  
*Bayesian estimation on finite time ruin probabilities* , 3rd International workshop on computational and financial econometrics, Limassol, 2009.
- CAÑADA, H.  
*Controlled diffusion processes with Markovian switchings applied to biochemical processes*, National congress of statistics and operations research, MURCIA, ESPAÑA, 2009.
- CASAS, O. J. ; ROMERA, M. R.  
*Control del stock de contaminación ambiental con criterios probabilísticos*, XII Conferencia Nacional de Biometría, CADIZ, ESPAÑA, 2009.
- CASCOS, I.  
*Profundidad según el número de observaciones*, XXXI Congreso Nacional de Estadística e Investigación Operativa, MURCIA, ESPAÑA, 2009.
- D'AURIA, B.; IVANOVS, J.; KELLA, O.; MANDJES, M.  
*Two sided reflection of a Markov Modulated Brownian Motion* , International Workshop on Queueing and Stochastic Systems in Honor of Prof. Onno J. Boxma, Haifa, ISRAEL, 2009.
- DURBAN, M. L.  
*GLAMM as mixed models*, 2009 RSS Conference 24, EDIMBURGO, REINO UNIDO, 2009.
- DURBAN, M. L. ; LEE, D.-J.  
*P-spline mixed-models for spatio-temporal data* , First Workshop on spatio-temporal disease mapping, VALENCIA, ESPAÑA, 2009.
- FAJARDO, M.A.; FAJARDO, M.A.; ALBARRAN, I.; ALONSO, P. J.  
*Medida de la especialización económica de las provincias españolas a través del uso del suelo urbano*, XXIII Reunión anual ASEPELT, Covilhá, PORTUGAL, 2009.
- FEBRERO, M.; GALEANO, P. ; GONZALEZ , W.  
*Principal components selection for estimating the functional linear model with scalar response*; en: Statistical methods for the analysis of large data-sets, 2009.
- FLORES, R.J.  
*An empirical analysis of the role of economies of scale and trade-off for Spanish football* , Sport and urban Economics Annual Conference, Berlin, 2009.
- FRANCO, A. M. ; LILLO, R. E. ; ROMO, J.  
*Bandas de confianza bootstrap para la diferencia de funciones percentilicas de vida residual* , XXXI Congreso Nacional de Estadistica e Investigación Operativa, MURCIA, ESPAÑA, 2009.
- GALEANO, P. ; AUSIN, M. C.  
*Un modelo multivariante garch asimétrico de mixturas gaussianas*, XXXI Congreso Nacional de Estadistica e Investigación Operativa, MURCIA, ESPAÑA, 2009.

- GALEANO, P. ; TSAY, R.S.  
*Shifts in individual parameters of a garch model*, Second workshop of the ercim group on statistics & computing, Limassol, 2009.
- GARCIA, S.  
*Solving large p-median problems* , XXXI Congreso Nacional de Estadística e Investigación Operativa, MURCIA, ESPAÑA, 2009.
- GARCIA, S.; LABBÉ, M.; MARIN, A.  
*An enlarge-and-branch algorithm for the p-median problem*, Location and Network Design (LAND), Pucón, CHILE, 2009.
- GARCIA, S.; LABBÉ, M.; MARIN, A.  
*A method for the resolution of large p-median instances*, CORAL 2009, ALICANTE, ESPAÑA, 2009.
- GARCIA, S.; LABBÉ, M.; MARIN, A.  
*Resolution of large p-median problems with a column-and-row generation algorithm*, 20 International Symposium on Mathematical Programming, Chicago, ESTADOS UNIDOS DE AMERICA, 2009.
- GIULIODORI, M.A.; LILLO, R. E. ; PEÑA, D.  
*Clustering and classifying images with local and global variability*, XXXI Congreso Nacional de Estadística e Investigación Operativa, MURCIA, ESPAÑA, 2009.
- GONZALEZ, I. M. ; SANCHEZ, I.  
*Asignación estadística de tolerancias multivariantes*, XXXI Congreso Nacional de Estadística e Investigación Operativa, MURCIA, ESPAÑA, 2009.
- GRANE, A.  
*Exact goodness-of-fit test for censored data* , 2nd Workshop of the ERCIM Working group on computing and statistics (ERCIM09), Limassol, CHIPRE, 2009.
- GRANE, A.; VEIGA, M.H.  
*Wavelet-based outlier detection in volatility models*, European Regional Meeting of the International Society for Business and Industrial Statistics, Cagliari, ITALIA, 2009.
- GRANE, A.; VEIGA, M.H.  
*Wavelet-based outlier detection in volatility models*, 6th St Petersburg Workshop on simulation, St. Petersburg, RUSIA, 2009.
- JACH, A.E.  
*Wavelet estimation of heavy tails*, 6th International Conference on Extreme Value Analysis, Colorado, ESTADOS UNIDOS DE AMERICA, 2009.
- JARAMILLO, A.; SANCHEZ, I. ; CASTRONUOVO, E.D.; USAOLA, J.  
*Simulating scenarios and prediction intervals in wind power forecasting with Beta distribution*, 1 1th. Spanish-Portuguese Conference on Electrical Engineering, ZARAGOZA, ESPAÑA, 2009.
- JIMENEZ, R.J.  
*Nonparametric estimation of surface integrals*, Stochastic Processes and its applications (SAP), Berlin, 2009.
- JIMENEZ, R.J.  
*Limits theorems for o-divergences based on k-spacings* , Congreso Nacional de Estadística e Investigación Operativa (SEIO), MURCIA, ESPAÑA, 2009.

- LEE, D.-J.; DURBAN, M. L.  
*Nested B-spline bases: an efficient method for spatio-temporal smoothing* , 24 International Workshop on Statistical Modelling, Ithaca, ESTADOS UNIDOS DE AMERICA, 2009.
- LEE, D.-J.; DURBAN, M. L. ; EILERS, P.  
*Space-time modelling of air pollution with array methods*, GLAM:Array methods in Statistics, Edimburgo, 2009.
- LETON, E.; DURBAN, M. L. ; D'AURIA, B.; LEE, D.-J.  
*Self learning mini-videos through Internet and mobile telephones: a help to the student in the Bologna process* , International Conference on Education and New Learning Technologies EDULEARN09, BARCELONA, ESPAÑA, 2009.
- LETON, E.; ZULUAGA, P.  
*Tests de supervivencia para varios grupos ordenados* , 30 Congreso Nacional de Estadística e Investigación Operativa, VALLADOLID, ESPAÑA, 2008.
- LOPES MOREIRA, M.H.; GRANE, A.  
*Outliers and the estimation of minimum capital risk requirements* , Riesgo 2009, MADRID, ESPAÑA, 2009.
- LOPEZ-CASTROMAN, J.; BLASCO-FONTECILLA, H.; DELGADO, D.; BASURTE, I.; OQUENDO, M.; BACA-GARCIA, E.; REYES-TORRES, M.  
*Parental age: contribution to psychopathology*, American Psychiatric Association (APA)Annual Meeting, San Diego, ESTADOS UNIDOS DE AMERICA, 2009.
- MARIN, J.M.; NIETO, C.  
*Métodos no lineales aplicados al estudio de expresiones en datos de microarrays* , XXXI Congreso SEIO, MURCIA, ESPAÑA, 2009.
- MARTIN, B.; CARRIZOSA, E.  
*Binarized support vector machine and extensiones*, EURO Conference 2009 in Bonn- OR creating competitive advantage 23rd European Conference on Operational Research, Bonn, 2009.
- MARTIN, B.; CARRIZOSA, E.  
*Binarizing data within support vector machines*, 7th EUROPT Workshop on Advances in continuous optimization, Remagen, ALEMANIA, 2009.
- MARTIN, N.; PARDO, L.  
*Preliminary phi-divergence test estimators in a contingency table with symmetry structure* , The pyreness international workshop on statistics and operations research (SPO 2009), HUESCA, ESPAÑA, 2009.
- MOLANES, E.M.; LETON, E.  
*Empirical likelihood based approach for the inference of the Youden index and associated threshold* , 24th International Workshop on Statistical Modelling, Ithaca (New York), ESTADOS UNIDOS DE AMERICA, 2009.
- MOLINA, I. ; RAO, J.N.K.  
*Estimation of poverty measures in small areas*, 57th Session of the ISI 2009, Durban, REPUBLICA SUDAFRICANA, 2009.
- MOLINA, I. ; RAO, J.N.K.  
*Estimación de medidas de pobreza en áreas pequeñas*, XXXI Congreso Nacional de Estadistica e Investigacion Operativa y V Jornadas de Estadistica Publica, MURCIA, ESPAÑA, 2009.

- MOLINA, I. ; RAO, J.N.K.  
*Small area estimation of poverty indicators*, SAE 2009 Conference on Small Area Estimation, ELCHE, ESPAÑA, 2009.
- MOLINA, I. ; RAO, J.N.K.  
*Estimation of poverty measures in small areas*, NTTS 2009 (New techniques and technologies for statistics), Bruselas, BÉLGICA, 2009.
- NIÑO, J.  
*A marginal productivity index policy for scheduling multiclass queues with setups*; en: Proceedings of the 2nd EURO-NF Workshop on Network Control and Optimization, SPRINGER , , 2009.
- NIÑO, J.  
*A marginal productivity index policy for opportunistic spectrum access with sensing errors*; en: Proceedings of the 3rd Euro-NF Workshop on Networks Control and Optimization, SPRINGER , , 2009.
- NIÑO, J.  
*Índices de prioridad basados en productividad marginal para problemas de decisión Markovianos de tipo "restless bandits"*, I Reunión Conjunta Sociedad Matemática Mexicana-Real Sociedad Matemática Española, Oaxaca, MEXICO, 2009.
- NIÑO, J.  
*A marginal productivity index policy for opportunistic spectrum access with sensing errors*, 3rd Euro-NG Workshop on Network Control and Optimization , Eindhoven, HOLANDA, 2009.
- NIÑO, J.  
*Experiences in operations research teaching: spreadsheets, economic insight and experimentation*; en: Proceedings of the 2009 International Conference on Education and New Learning Technologies, , 2009.
- NIÑO, J.  
*Experiences in operations research teaching: spreadsheets, economic insight, and experimentation*, Internacional Conference on Education and New Learning Technologies, BARCELONA, ESPAÑA, 2009.
- NIÑO, J.  
*Multi-target tracking via restless bandits marginal productivity index and Kalman filter in discrete time*, 2009 SIAM Annual Meeting and SIAM conference on Control and Its Applications, Denver, ESTADOS UNIDOS DE AMERICA, 2009.
- NIÑO, J.; VILLAR, S.S.  
*Multi-target tracking via restless bandit marginal productivity indices and Kalman filter in discrete time*; en: Proceeding of Joint 48th IEEE Conference on Decision and Control and 28th Chinese Control Conference, , 2009.
- NIÑO, J.; VILLAR, S.S.  
*Multi-target tracking via restless bandit marginal productivity indices and Kalman filter in discrete time*, , 2009.
- NOGALES, F. J.  
*Optimization and Finance* , Modelling Summer at IMUS, Intensive and Advanced School on Mathematical Modeling, SEVILLA, ESPAÑA, 2009.
- NOGALES, F. J.  
*Efficient Estimation of Large Dynamic Multivariate Volatility Models for Portfolio Optimization*, INFORMS Annual Meeting, San Diego, ESTADOS UNIDOS DE AMERICA, 2009.

- NOGALES, F. J.  
*Porfolio Optimizacion and Out-of-Sample Performance*, XXXI Congreso Nacional de Estadística e Investigación Operativa, MURCIA, ESPAÑA, 2009.
- PAVANI, S.K.; DELGADO, D.; FRANGI, A.  
*A rapidly trainable and global illumination invariant object detection system*, 14th Iberoamerican Congress on Pattern Recognition, Guadalajara, MEXICO, 2009.
- PAVANI, S.K.; DELGADO, D.; FRANGI, A.  
*Gaussian weak classifiers based on haar-like features with four rectangles for real-time face detection*, The 13TH International conference on Computer Analysis of Images and Patterns, Munster, ALEMANIA, 2009.
- PEÑA, D. ; ALVAREZ, A.  
*Identificacion de grupos mediante algoritmos Sar* , XXXI Congreso Nacional de Estadistica e investigacion operativa, MURCIA, ESPAÑA, 2009.
- PEREZ, B.; PEÑA, D. ; MOLINA, I.  
*Robust variance components in the nested-error model*, 2nd International workshop of the ERCIM working group on Computing and Statistics, Limassol, CHIPRE, 2009.
- RAMÍREZ, J. ; LILLO, R. E. ; WIPER, M. P.  
*Sobre la identificabilidad del proceso markoviano de llegadas o MAP*, XXXI Congreso Nacional de Estadistica e Investigación Operativa, MURCIA, ESPAÑA, 2009.
- RAMÍREZ, J. ; LILLO, R. E. ; WIPER, M. P.  
*The markovian arrival process: identifiability problems and Bayesian inference*, 16th European Young Statistician Meeting, Bucarest, 2009.
- RAMÍREZ, J. ; LILLO, R. E. ; WIPER, M. P.  
*Bayesian inference for the markovian arrival processes*, Sith workshop on Bayesian inference in stochastic processes, Brixen, 2009.
- ROMERA, M. R. ; CAÑADA, H.  
*Diffusion processes with markovian switchings applied to biochemical processes*, XXXI Congreso Nacional de Estadistica e Investigación Operativa, MURCIA, ESPAÑA, 2009.
- ROMERA, M. R. ; CASAS, O. J.  
*Controlling the International Stock Pollutant with Policies Depending on Target Values* , 2nd Workshop on Dynamic games in management science, VALLADOLID, ESPAÑA, 2009.
- ROMERA, M. R. ; PEÑA, D.  
*PLS Regresion methods*, ERCIM 2009, CHIPRE, 2009.
- ROMO, J.  
*Analysis of functional data*, SIS meeeting: Statistical methods for the analysis of large data sets, Pescara, 2009.
- ROMO, J. ; ARRIBAS, A.  
*Robust depth-based curve registration* , ICORS?09, Parma, 2009.
- ROMO, J. ; ARRIBAS, A.  
*Robust depth-based curve registration* , EMS?09, Toulouse, 2009.

- ROMO, J. ; FRANCO, A. M. ; LILLO, R. E.  
*Bandas de confianza bootstrap para la diferencia de funciones de vida cuantílica residual ,* Conferencia Biometría 2009, CADIZ, ESPAÑA, 2009.
- ROMO, J. ; FRANCO, A. M. ; LILLO, R. E.  
*Confidence bands for the differences of two percentile residual life functions ,* Mathematical methods in reliability, Moscú, 2009.
- ROMO, J. ; LOPEZ, S.; TORRENTE, A.  
*Analisis estadístico robusto para datos de microarrays,* Conferencia Biometría 2009, CADIZ, ESPAÑA, 2009.
- ROMO, J. ; TORRENTE, A.  
*Refinamientos robustos de k-medias mediante profundidad,* Conferencia Biometría 2009, CADIZ, ESPAÑA, 2009.
- ROMO, J.; ALVA, K.P.; RUIZ, E.  
*Modelling intra-daily volatility by functional data analysis: an empirical application to the spanish stock market,* Computational and Financial Econometrics, CFE?09, Limassol, 2009.
- RUIZ, E. ; NIETO, M.R.  
*Bootstrap prediction intervals for risk measures in the context of GARCH models ,* 3rd International Conference on Computational and Financial Econometrics, Limassol, 2009.
- RUIZ, E. ; RODRIGUEZ, A.F.  
*Bootstrap prediction in unobserved component models,* 29th International Symposium on Forecasting, Hong Kong, 2009.
- RUIZ, E. ; RODRIGUEZ, A.F.  
*Bootstrap prediction mean squared errors of unobserved states based on the Kalman filter with estimated parameters ,* 3rd International Conference on Computational and Financial Econometrics, Limassol, 2009.
- RUIZ, E. ; ROMO, J. ; ALVA, K.P.  
*Modelling intra-daily volatility by functional data analysis: an empirical application to the Spanish Stock market ,* 3rd International Conference on Computational and Financial Econometrics, Limassol, 2009.
- TENA, J.  
*Impact of importing foreign talent on performance levels of local co-workers,* WPEG labour economics conference, Nottingham, REINO UNIDO, 2009.
- TENA, J.  
*Regional inflation dynamics using space-time models,* III World conference of Spatial Econometrics, BARCELONA, ESPAÑA, 2009.
- TENA, J.  
*Forecasting Spanish inflation using the maximum disaggregation level by sectors and geographical areas,* Sport and Urban Economics, Berlin, 2009.
- TORRADO, N.  
*Las estadísticas no mienten, pero los mentiroso pueden hacer estadísticas,* IX Semana de la Ciencia de Madrid, ESPAÑA, 2009.
- TORRADO, N.; LILLO, R. E. ; WIPER, M. P.  
*Hazard rate ordering of spacings of heterogeneous exponential random variables;* en: \_, 2009.

- TORRADO, N.; LILLO, R. E. ; WIPER, M. P.  
*Gaussian processes in software reliability*, The Pyrenees International workshop on statistics, probability and operation research, *JACA, ESPAÑA*, 2009.
- TORRADO, N.; LILLO, R. E. ; WIPER, M. P.  
*Ordenaciones estocásticas de los spacing de variables aleatorias exponenciales heterogéneas* , XXXI Congreso Nacional de Estadistica e Investigación Operativa, *MURCIA, ESPAÑA*, 2009.
- VELILLA, S.  
*Properties of the quadratic subspace in discriminant analysis* , 168th Annual meeting of the American Statistical Association, *Washington, 2009*.
- VELILLA, S.  
*Estructura cuadrática de los datos de Fisher* , XXIX Reunion de la SEIO, *MURCIA, ESPAÑA*, 2009.
- VILLAR, S.S.; NIÑO, J.  
*Multi-traget tracking via restless bandits?marginal productivity index and kalman filter in discrete time*, SIAM Conference on Control and its applications, *Denver, Colorado, ESTADOS UNIDOS DE AMERICA*, 2009.

## **Actividades de formación y movilidad de personal investigador**

### **Estancias en otros centros**

- ANA ARRIBAS GIL  
*Título:* Estancia de investigación "Estimación semiparamétrica en modelos mixtos no lineales" en el Departamento de Estadística de la Universidad de Valparaíso, Chile  
*Centro Externo:* Universidad de Valparaíso  
*País:* CHILE  
*Duración:* 10/2009 a 10/2009.
- DAE-JIN LEE HWANG  
*Título:* Estancia de investigación "Smoothing techniques for environmental problems"  
*Centro Externo:* Departamento de Estadística, Universidad de Glasgow  
*País:* REINO UNIDO  
*Duración:* 28/08/2009 a 03/12/2009.
- ISABEL MOLINA PERALTA  
*Título:* Estancia de investigación "Estimación en áreas pequeñas"  
*Centro Externo:* Carleton University  
*País:* CANADA  
*Duración:* 06/07/2009 a 06/08/2009.
- MARIA HELENA LOPES MOREIRA DA VEIGA  
*Título:* Estancia de investigación en Université Montreal, Economics Department (Simulated nonparametric moments estimation)  
*Centro Externo:* Université Montreal  
*País:* CANADA  
*Duración:* 01/01/2009 a 01/02/2009.
- RAUL JOSE JIMENEZ RECAREDO  
*Título:* Estancia de investigación en el Department of Statistics and Operation Research.  
*Centro Externo:* Universitat Politecnica de Cataluña

*País:* ESPAÑA

*Duración:* 01/2009 a 02/2009.

## **ÁREA DE CONOCIMIENTO: FUNDAMENTOS DEL ANALISIS ECONOMICO**

### **Actividades de investigación**

#### **Tesis Doctorales**

- Predicción en modelos de componentes inobservables condicionalmente heteroscedasticos  
*Autores:* PELLEGRINI S.  
*Director:* RUIZ, E. ; ESPASA, A.  
*Año:* 2009

### **Publicaciones y actividades de difusión de resultados**

#### **Publicaciones en revistas científicas internacionales**

- BROTO, M. C. ; RUIZ, E.  
Testing for Conditional Heteroscedasticity in the Components of Inflation , *Studies in nonlinear dynamics and econometrics*, Vol. 13, Núm. 2, 2009, ESTADOS UNIDOS DE AMERICA.
- PELLEGRINI S. ; RUIZ, E. ; ESPASA, A.  
Conditionally heteroscedastic unobserved component models and their reduced form, on line publication DOI: 10.1016/j.econlet.2009.12034, *Economics letters*, 2009, HOLANDA.
- RODRIGUEZ, A.; RUIZ, E.  
Bootstrap prediction intervals in state-space models , *Journal of time series analysis*, Vol. 30, Núm. 2, 2009, pp. 167-178, REINO UNIDO.
- TENA J.; ESPASA, A. ; PINO, G.  
Forecasting spanish inflation using the maximum disaggregation level by sectors and geographical areas, online publication. DOI: 10.1177/0160017609336629, *International Regional Science Review*, 2009.
- VEIGA, M.H.; RUIZ, E. ; PEREZ, A.  
A note on the properties of power-transformed returns in long-memory stochastic volatility models with leverage effect , *Computational statistics & data analysis*, Vol. 53, Núm. 10, 2009, pp. 3593-3600, HOLANDA.

#### **Documentos de trabajo**

- ALVA, K.P.; ROMO, J. ; RUIZ, E.  
Modelling intra-daily volatility by functional data analysis: an empirical application to the spanish stock market, *UC3M Working Paper. Statistics and Econometrics Series 09-28-09* UNIVERSIDAD CARLOS III DE MADRID , 2009.

- RUIZ, E. ; RODRIGUEZ, M.J.  
GARCH models with leverage effect: differences and similarities , *Statistics and Econometrics Series WP09-03(02*, 2009.
- RUIZ, E. ; SANTOS, A.; NOGALES, F.J.  
Comparing univariate and multivariate models to forecast portfolio value-at-risk, *UC3M Working papers. Statistics and Econometrics 09-22 UNIVERSIDAD CARLOS III DE MADRID* , 2009.

## Ponencias y Comunicaciones a congresos

- ESPASA, A.  
*Modeling monthly electricity demand: interaction between monthly econometric and daily time series models*, 29th International Symposium on Forecasting, Hong Kong, 2009.
- ESPASA, A.  
*Forecasting disaggregates and aggregate with common features*, First Macroeconomic Forecasting Conference, Roma, ITALIA, 2009.
- ESPASA, A.  
*The past and future behaviour of inflation and industrial production in the euro area and in the US, based on the IFL reports*, Workshop on The Economic perspectives of the Euro Area, European University Institute, 2009.
- ROMO, J.; ALVA, K.P.; RUIZ, E.  
*Modelling intra-daily volatility by functional data analysis: an empirical application to the spanish stock market*, Computational and Financial Econometrics, CFE?09, Limassol, 2009.
- RUIZ, E.  
*Mesa redonda sobre la situación y futuro de la enseñanza en Econometría* , I Jornadas de docencia en Econometría, GRANADA, ESPAÑA, 2009.
- RUIZ, E.  
*Bootstrap methods in Financial Econometrics*, Workshop on modelling and numerical methods in quantitative finance, CORUÑA (LA), ESPAÑA, 2009.
- RUIZ, E. ; NIETO, M.R.  
*Bootstrap prediction intervals for risk measures in the context of GARCH models* , 3rd International Conference on Computational and Financial Econometrics, Limassol, 2009.
- RUIZ, E. ; RODRIGUEZ, A.F.  
*Bootstrap prediction mean squared errors of unobserved states based on the Kalman filter with estimated parameters* , 3rd International Conference on Computational and Financial Econometrics, Limassol, 2009.
- RUIZ, E. ; RODRIGUEZ, A.F.  
*Bootstrap prediction in unobserved component models*, 29th International Symposium on Forecasting, Hong Kong, 2009.
- RUIZ, E. ; ROMO, J. ; ALVA, K.P.  
*Modelling intra-daily volatility by functional data analysis: an empirical application to the Spanish Stock market* , 3rd International Conference on Computational and Financial Econometrics, Limassol, 2009.

## **Actividades de formación y movilidad de personal investigador**

### **Estancias en otros centros**

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