

Matemática Aplicada

Áreas de conocimiento: Matemática Aplicada

Director: Miguel Ángel Piñar González

Secretaria: Julia García Cabello

Página web: <https://mateapli.ugr.es>

Profesorado: CU: 9, PTU: 34, PTEU: 1, PDI Contratado y Otros: 5.

Tesis leídas

- Teoremas tipo Hahn-Banach y optimización no lineal

Doctorando: Pablo Montiel López

Director: Manuel Ruiz Galán

Fecha de lectura: 25-09-2017

- On Semiclassical Families Of Bivariate Orthogonal Polynomials

Doctorando: Misael Marriaga Castillo

Director: Francisco Marcellán, Teresa E. Pérez, Miguel A. Piñar

Fecha de lectura: 27-10-2017

- Analysis and numerical simulation of network of noisy leaky integrate and fire neuron models

Doctorando: Ricarda Schneider

Director: María José Cáceres Granados, José Miguel Mantas Ruiz

Fecha de lectura: 15-01-2018

Grupos de Investigación.

FQM359 ANÁLISIS CONVEXO Y NUMÉRICO

- Responsable: MANUEL RUIZ GALÁN

FQM316 ECUACIONES DE EVOLUCIÓN EN DERIVADAS PARCIALES

- Responsable: JUAN SOLER

FQM183 ECUACIONES DIFERENCIALES

- Responsable: RAFAEL ORTEGA RÍOS

FQM191 MATEMATICA APLICADA

- Responsable: MIGUEL PASADAS FERNANDEZ

FQM384 Ortogonalidad y Aplicaciones

- Responsable: TERESA ENCARNACIÓN PÉREZ FERNÁNDEZ

Publicaciones en revistas

- 2018 Artículo: MULTIVARIATE ANALYSIS AND EXTRACTION OF PARAMETERS IN RESISTIVE RAMS USING THE QUANTUM POINT CONTACT MODEL, Journal of Applied Physics, 123, 014501, - PEDRO GONZÁLEZ RODELAS

- 2018 Artículo: El nuevo reparto de diputados en el Parlamento Europeo: aceptable pero mejorable, Análisis del Real Instituto Elcano, , ARI 41/2018, - ANTONIO PALOMARES BAUTISTA

JOSÉ MARTÍNEZ AROZA

VICTORIANO RAMÍREZ GONZÁLEZ

- 2018 Artículo: El nuevo reparto de diputados en el Parlamento Europeo: aceptable pero mejorable, Análisis del Real Instituto Elcano, , ARI 41/2018, - ANTONIO PALOMARES BAUTISTA

JOSÉ MARTÍNEZ AROZA

VICTORIANO RAMÍREZ GONZÁLEZ

- 2018 Artículo: Husimi function and phase-space analysis of bilayer quantum Hall systems at $\zeta = 2/\epsilon$, Journal of Statistical Mechanics: Theory and Experiment, 18, 053112, 1-26

MANUEL CALIXTO MOLINA

- 2018 Artículo: The Frobenius number for sequences of triangular and tetrahedral numbers, Journal of Number Theory, 186, , 473-492

AURELIANO MATÍAS ROBLES PÉREZ

- 2017 Artículo: On the Sobolev orthogonality of classical orthogonal polynomials for non classical parameters, Rocky Mountain Journal of Mathematics, 47, 1, 267-288

JOAQUÍN SÁNCHEZ LARA

- 2017 Artículo: Sound branch cash management for less: a low-cost forecasting algorithm under uncertain demand, Omega, 70, C, 118-134

JULIA GARCÍA CABELLO

- 2017 Artículo: Parallelizing drainage network algorithm using free software: Octave as a solution, Mathematics and Computers in Simulation, 137, , 424-430

MARÍA JOSÉ IBÁÑEZ PÉREZ

- 2017 Artículo: The evaluation problem in discrete semi-hidden Markov models, *Mathematics and Computers in Simulation*, 137, , 350-365
JOSÉ MARTÍNEZ AROZA
- 2017 Artículo: Delocalization properties at isolated avoided crossings in Lipkin-Meshkov-Glick type Hamiltonian models,, *Journal of Statistical Mechanics: Theory and Experiment*, , , 013101-
MANUEL CALIXTO MOLINA
- 2017 Artículo: Bivariate orthogonal polynomials, 2D Toda lattices and Lax-type pairs, *Applied Mathematics and Computation*, 309, , 142-155.
TERESA ENCARNACIÓN PÉREZ FERNÁNDEZ
- 2017 Artículo: Three term relations for a class of bivariate orthogonal polynomials, *Mediterranean Journal of Mathematics*, 14, 2, 1-26
MIGUEL ÁNGEL PIÑAR GONZÁLEZ
TERESA ENCARNACIÓN PÉREZ FERNÁNDEZ
- 2017 Artículo: One-Parameter Fisher-Rényi Complexity: Notion and Hydrogenic Applications, *Entropy*, 19, , 16-
PABLO SANCHEZ MORENO
- 2017 Artículo en prensa: Best Polynomial Approximation on the Unit Ball, *IMA Journal of Numerical Analysis*, , , -
MIGUEL ÁNGEL PIÑAR GONZÁLEZ
- 2017 Artículo: Qualitative behavior for flux-saturated mechanisms: traveling waves, waiting time and smoothing effects, *Journal of the European Mathematical Society*, 19, , 441-472
JUAN CALVO YAGÜE
JUAN CAMPOS RODRÍGUEZ
JUAN SOLER
ÓSCAR SÁNCHEZ ROMERO
- 2017 Artículo: Blow-up, steady states and long time behaviour of excitatory-inhibitory nonlinear neuron models, *Kinetic & Related Models (Online)*, 10, 3, 587-612
MARÍA JOSÉ CÁCERES GRANADOS
- 2017 Artículo: Hermite spline interpolation on a three direction mesh from Powell-Sabin and Hsieh-Clough-Tocher finite elements, *Journal of Computational and Applied Mathematics*, 318, , 565-579
DOMINGO BARRERA ROSILLO
MARÍA JOSÉ IBÁÑEZ PÉREZ
- 2017 Artículo: Polynomial pattern finding in scattered data, *Journal of Computational and Applied Mathematics*, 318, , 107-116
DOMINGO BARRERA ROSILLO
MARÍA JOSÉ IBÁÑEZ PÉREZ
RAFAEL JOSÉ YÁÑEZ GARCÍA
- 2017 Artículo: On the construction of trivariate near-best quasi-interpolants based on C2 quartic splines on type-6 tetrahedral partitions, *Journal of Computational and Applied Mathematics*, 311, , 252-261
DOMINGO BARRERA ROSILLO
MARÍA JOSÉ IBÁÑEZ PÉREZ
- 2017 Artículo: Study on convergence and error of a numerical method for solving systems of nonlinear Fredholm-Volterra integral equations of Hammerstein type, *Applicable Analysis*, 96, 3, 516-527
DOMINGO GÁMEZ DOMINGO
MARIA ISABEL BERENGUER MALDONADO
- 2017 Artículo: Solution of systems of integro-differential equations using numerical treatment of fixed point, *Journal of Computational and Applied Mathematics*, 315, , 343-353
ANTONIO LÓPEZ LINARES
DOMINGO GÁMEZ DOMINGO
MARIA ISABEL BERENGUER MALDONADO
- 2017 Artículo: A computational method for solving a class of two dimensional Volterra integral equations, *Journal of Computational and Applied Mathematics*, 318, , 403-410
DOMINGO GÁMEZ DOMINGO
MARIA ISABEL BERENGUER MALDONADO
- 2017 Artículo: Copulas with given values on the tails, *International Journal of Approximate Reasoning*, 85, , 59-67
JOSÉ JUAN QUESADA MOLINA
- 2017 Artículo: Numerical semigroups in a problem about cost-effective transport, *Forum Mathematicum*, 29, 2, 329-345
AURELIANO MATÍAS ROBLES PÉREZ
- 2017 Artículo: The Frobenius number in the set of numerical semigroups with fixed multiplicity and genus, *International Journal of Number Theory*, 13, 4, 1003-1011
AURELIANO MATÍAS ROBLES PÉREZ
- 2017 Artículo: On the (non-)uniqueness of the Levi-Civita solution in the Einstein-Hilbert-Palatini formalism, *Physics Letters. Section B: Nuclear, Elementary Particle and High-Energy Physics*, 768, , 280-287
PABLO SANCHEZ MORENO

- 2017 Artículo: Existence and multiplicity of entire radial spacelike graphs with prescribed mean curvature function in certain Friedmann-Lemaître-Robertson-Walker spacetimes, *Communications in Contemporary Mathematics*, 19, 2, -
PEDRO JOSÉ TORRES VILLARROYA
- 2017 Artículo: Existence and extendibility of rotationally symmetric graphs with a prescribed higher mean curvature function in Euclidean and Minkowski spaces, *Journal of Mathematical Analysis and Applications*, 446, , 1046-1059
PEDRO JOSÉ TORRES VILLARROYA
- 2017 Artículo: Uniform circular motion in General Relativity: Existence and extendibility of the trajectories, *Classical and quantum gravity*, , , -
PEDRO JOSÉ TORRES VILLARROYA
- 2017 Artículo: First integrals for the Kepler problem with linear drag, *Celestial Mechanics and Dynamical Astronomy*, 127, , 35-48
RAFAEL ORTEGA RÍOS
- 2017 Artículo en prensa: Asymptotic behaviour of the Christoffel functions on the Unit Ball in the presence of a Mass on the Sphere, *Journal of Approximation Theory*, , , -
MARIA CLOTILDE MARTINEZ ALVAREZ
MIGUEL ÁNGEL PIÑAR GONZÁLEZ
- 2017 Artículo en prensa: Elementary convex techniques for equilibrium, minimax and variational problems, *Optimization Letters*, , , -
MANUEL RUIZ GALÁN
- 2017 Artículo en prensa: A theorem of the alternative with an arbitrary number of inequalities and quadratic programming, *Journal of Global Optimization*, , , -
MANUEL RUIZ GALÁN
- 2017 Artículo: Filling holes with volume constraints, *Computers & Mathematics with Applications*, , , -
ANTONIO PALOMARES BAUTISTA
MIGUEL ÁNGEL FORTES ESCALONA
MIGUEL PASADAS FERNANDEZ
PEDRO GONZÁLEZ RODELAS
- 2017 Artículo: Euler-type equations and commutators in singular and hyperbolic limits of kinetic Cucker-Smale models, *Mathematical Models and Methods in Applied Sciences*, , , -
JESÚS DAVID POYATO SÁNCHEZ
JUAN SOLER
- 2017 Artículo: Numerical approximation using evolution PDE variational splines, *Numerical Methods for Partial Differential Equations*, , , -
ABDELOUAHED KOUIBIA KRICHI
MIGUEL PASADAS FERNANDEZ
- 2017 Artículo: Statistical Analysis of the Main Configuration Parameters of the Network Dynamic and Adaptive Radio Protocol (DARP), *Sensors*, 17, 7, 1502-
OLGA VALENZUELA CANSINO
- 2017 Artículo: Testing the performance of superhydrophobic aluminum surfaces, *Journal of Colloid and Interface Science*, 508, , 129-136
JOSÉ MARTÍNEZ AROZA
- 2017 Artículo: A decision model for bank branch site selection: Define branch success and do not deviate, *Socio-Economic Planning Sciences*, , , -
JULIA GARCÍA CABELLO
- 2017 Artículo: Impact of air masses on the distribution of ²¹⁰Pb in the southeast of Iberian Peninsula air., *Journal of Environmental Radioactivity*, 177, , 169-183
PEDRO GONZÁLEZ RODELAS
- 2017 Artículo: La composición del Parlamento Europeo para el año 2019, *Análisis del Real Instituto Elcano*, , ARI 105/2017, -
ANTONIO PALOMARES BAUTISTA
JOSÉ MARTÍNEZ AROZA
VICTORIANO RAMÍREZ GONZÁLEZ
- 2017 Artículo: Hilbert space and ground-state structure of bilayer quantum Hall systems at $\nu=2/\lambda$, *Physical Review B*, 95, 235302, 1-11
MANUEL CALIXTO MOLINA
- 2017 Artículo: Entanglement and quantum phase diagrams of symmetric multi-qubit systems, *Journal of Statistical Mechanics: Theory and Experiment*, 17, 103103, 1-18
MANUEL CALIXTO MOLINA
- 2017 Artículo: Response to "Comment on 'Entropy and complexity analysis of hydrogenic Rydberg atoms'" [J. Math. Phys. 58, 104101 (2017)], *Journal of Mathematical Physics*, 58, , 104102-1-104102-2
PABLO SANCHEZ MORENO

Capítulos de libros (con ISBN)

- 2017 Titulo Capítulo: The r-DP Methods to allocate the seats to member States, Titulo Libro: The Composition of the European parliament: Policy Department for Citizens' Rights and Constitutional Affairs, , 2017, VICTORIANO RAMÍREZ GONZÁLEZ
- 2017 Titulo Capítulo: The r-DP Methods to allocate the seats to member States, Titulo Libro: The Composition of the European Parliament: Policy Department for Citizens' Rights and Constitutional Affairs PE 583.117, , 2017, VICTORIANO RAMÍREZ GONZÁLEZ

Contribuciones en congresos

- 2017 Poster en Congreso: Toda lattices and orthogonal polynomials in two variables, Congreso Bienal de la Real Sociedad Matemática Española (RSME2017), 30/01/2017, Zaragoza, España, Congreso TERESA ENCARNACIÓN PÉREZ FERNÁNDEZ
- 2017 Poster en Congreso: Orthogonal polynomials on the unit ball with a mass on the sphere, CONGRESO BIENAL DE LA REAL SOCIEDAD MATEMÁTICA ESPAÑOLA, 30/01/2017, - Zaragoza, España, Congreso MARIA CLOTILDE MARTINEZ ALVAREZ MIGUEL ÁNGEL PIÑAR GONZÁLEZ
- 2017 Ponencia en Congreso: Topological Insulators and Characterization of their Phases, New Trends in Complex Quantum Systems Dynamics, 08/05/2017, CARTAGENA - ESPAÑA, Congreso MANUEL CALIXTO MOLINA
- 2017 Ponencia en Congreso: Topological Insulators and Characterization of their Phases, New Trends in Complex Quantum Systems Dynamics, 08/05/2017, CARTAGENA, Congreso MANUEL CALIXTO MOLINA
- 2017 Poster en Congreso: FlowMPI: An open source alternative to flow accumulation analysis, 7th International Conference on approximation methods and numerical modelling in environment and natural resources, 17/05/2017, OUJDA, MARRUECOS, Congreso MARÍA JOSÉ IBÁÑEZ PÉREZ
- 2017 Poster en Congreso: Computing automatic transformation between homologous cartographic features, 7th International Conference on approximation methods and numerical modelling in environment and natural resources, 17/05/2017, OUJDA, MARRUECOS, Congreso MARÍA JOSÉ IBÁÑEZ PÉREZ
- 2017 Poster en Congreso: Equilibrium measures in the presence of a weak rationalexternal field, "Congreso bienal de la Real Sociedad Matemática Española (RSME2017)", 30/01/2017, Zaragoza (España), Congreso JOAQUÍN SÁNCHEZ LARA
- 2017 Ponencia en Congreso: Equilibrium measures in presence of external fields created by fixed charges, "Optima Point Configuration and Orthogonal Polynomials", 19/04/2017, CASTRO URDIALES, CANTABRIA, Congreso JOAQUÍN SÁNCHEZ LARA
- 2017 Sesión plenaria en Congreso: Bivariate orthogonal polynomials, 2D Toda lattices and Lax-type pairs, OPTIMAL POINT CONFIGURATIONS AND ORTHOGONAL POLYNOMIALS 2017, 19/04/2017, CASTRO URDIALES (CANTABRIA), Congreso TERESA ENCARNACIÓN PÉREZ FERNÁNDEZ
- 2017 Sesión plenaria en Congreso: On orthogonal polynomials in several variables, VI Iberoamerican workshop on orthogonal polynomials and applications, 09/05/2017, Uberaba, Brasil, Congreso LIDIA FERNÁNDEZ RODRÍGUEZ
- 2017 Ponencia en Congreso: Zeros of classical orthogonal polynomials in two variables, Optimal points configurations and orthogonal polynomials, 19/04/2017, CASTRO URDIALES, Congreso LIDIA FERNÁNDEZ RODRÍGUEZ
- 2017 Conferencia Congreso no publicada: Sobolev orthogonal polynomials in several variables, ¿¿VI IBEROAMERICAN WORKSHOP ON ORTHOGONAL POLYNOMIALS AND APP¿LICATIONS, 09/05/2017, Uberaba, Brasil, Congreso ANTONIA MARÍA DELGADO AMARO
- 2017 Poster en Congreso: Polinomios núcleos y funciones de Christoffel para polinomios ortogonales de Sobolev en la bola unidad, Congreso Bienal de la Real Sociedad Española de Matemáticas, 30/01/2017, Zaragoza (España), Congreso ANTONIA MARÍA DELGADO AMARO LIDIA FERNÁNDEZ RODRÍGUEZ
- 2017 Comunicación en congreso: An application of semi-hidden Markov models to analyse stock market behaviour, 7th International Conference on approximation methods and numerical modelling in environment and natural resources, 17/05/2017, OUJDA, MARRUECOS, Congreso JOSÉ MARTÍNEZ AROZA
- 2017 Conferencia Congreso no publicada: Hyperbolic vs parabolic macroscopic limits in Kinetic Theory of

- Active Particles, 2nd Mini-Workshop on "Mathematical Models for Cell Migration and Dispersal",
24/02/2017, Kaiserslautern, Alemania, Congreso
JUAN JOSÉ NIETO MUÑOZ
- 2017 Ponencia en Congreso: Mesoscopic models for neural networks, Workshop on "Cross diffusion systems
and kinetic equations for biology", 10/05/2017, Austria / Vienna, Congreso
MARÍA JOSÉ CÁCERES GRANADOS
- 2017 Conferencias impartidas en Congreso: Medidas de equilibrio para campos externos creados por varias
cargas fijas, Coloquio del Departamento de Análisis Matemático (Universidad de La Laguna), 28/03/2017,
La Laguna (Tenerife), Congreso
JOAQUÍN SÁNCHEZ LARA
- 2017 Comunicación en curso: Comportamiento colectivo de especies y límites hidrodinámicos singulares del
modelo de Cucker-Smale, II Jornadas de Investigadores en Formación: Fomentando la
Interdisciplinariedad, 17/05/2017, Facultad de Medicina. Universidad de Granada, Jornada
JESÚS DAVID POYATO SÁNCHEZ
- 2017 Comunicación en congreso: Optimal knots allocation in bicubic spline interpolation, Inter. Conf. on
Approx. Methods and Numerical Modelling in Environ. and Nat. Ressources, 17/05/2017, OUJDA
(MARRUECOS), Congreso
PEDRO GONZÁLEZ RODELAS
MIGUEL PASADAS FERNANDEZ
- 2017 Poster en Congreso: Approximation error of 3D fuzzy data by smoothing bicubic splines, 7th International
Conference on approximation methods and numerical modelling in environment and natural resources,
17/05/2017, OUJDA (MARRUECOS), Congreso
MIGUEL PASADAS FERNANDEZ
PEDRO GONZÁLEZ RODELAS
- 2017 Poster en Congreso: Filling holes with edge reconstruction, 7th International Conference on
approximation methods and numerical modelling in environment and natural resources, 17/05/2017, Oujda
(Marruecos), Congreso
MIGUEL LUIS RODRÍGUEZ GONZÁLEZ
MIGUEL ÁNGEL FORTES ESCALONA
PEDRO GONZÁLEZ RODELAS
ANTONIO PALOMARES BAUTISTA
- 2017 Poster en Congreso: Filling holes using a mesh of filled curves, 7th International Conference on
approximation methods and numerical modelling in environment and natural resources, 17/05/2017,
OUJDA (MARRUECOS), Congreso
PEDRO GONZÁLEZ RODELAS
MIGUEL PASADAS FERNANDEZ
ANTONIO PALOMARES BAUTISTA
MIGUEL ÁNGEL FORTES ESCALONA
- 2017 Comunicación en congreso: A new proposal for measuring electoral disproportionality: the quota index,
MAMERN VII-2017, May 17-20,- 2017 University Mohammed First, Oujda, Morocco, 17/05/2017, OUJDA
(MARRUECOS), Congreso
VICTORIANO RAMÍREZ GONZÁLEZ