

**DEPARTAMENTO DE**  
**MATEMATICAS**

## DEPARTAMENTO DE MATEMATICAS

### Actividades de investigación

#### Tesis Doctorales

- Achieving reliability and fairness in online task computing environments  
*Autor:* CHRISTOFOROU, E.  
*Director/Codirectores:* SANCHEZ, A.; FERNANDEZ, A.  
*Universidad:* UNIVERSIDAD CARLOS III DE MADRID  
*Año:* 2017
- Analytic properties of polynomials orthogonal with respect to coherent pair of measures supported on the unit circle  
*Autor:* GARZA, L.G.  
*Director/Codirectores:* MARCELLÁN, F.J.; GARZA, L.E.  
*Universidad:* UNIVERSIDAD CARLOS III DE MADRID  
*Año:* 2017
- Classical perturbations for matrices of linear functionals  
*Autor:* GARCIA, J.C.  
*Director/Codirectores:* MARCELLÁN, F.J.  
*Universidad:* UNIVERSIDAD CARLOS III DE MADRID  
*Año:* 2017
- Entropy, order and 2D confinement of hard particles  
*Autor:* GONZALEZ, M.  
*Director/Codirectores:* VELASCO, E.; MARTINEZ-RATON, Y.  
*Universidad:* UNIVERSIDAD AUTONOMA DE MADRID  
*Año:* 2017
- Evolutionary game theory for crowdsourcing  
*Director/Codirectores:* SANCHEZ, A.; FERNANDEZ, A.  
*Universidad:* UNIVERSIDAD CARLOS III DE MADRID  
*Centro donde se presentó:* CAMPUS DE LEGANES  
*Año:* 2017
- Iterated Integrals of Orthogonal Polynomials and Applications  
*Autor:* RIVERO, D.A.  
*Director/Codirectores:* PIJEIRA, H.E.  
*Universidad:* UNIVERSIDAD CARLOS III DE MADRID  
*Año:* 2017

- Models in molecular evolution: the case of toyLIFE  
*Autor:* CATALAN, P.  
*Director/Codirectores:* CUESTA, J.A.  
*Universidad:* UNIVERSIDAD CARLOS III DE MADRID  
*Año:* 2017
- On Semiclassical families of bivariate orthogonal polynomials  
*Autor:* MARRIAGA, M.E.  
*Director/Codirectores:* MARCELLÁN, F.J.; PEREZ, T.E.; PIÑAR, M.A.  
*Universidad:* UNIVERSIDAD CARLOS III DE MADRID  
*Año:* 2017
- Small values of the hyperbolicity constant in graphs  
*Autor:* ROSARIO, O.  
*Director/Codirectores:* RODRIGUEZ, J. M.; SIGARRETA, J.M.  
*Universidad:* UNIVERSIDAD CARLOS III DE MADRID  
*Año:* 2017
- Word series for the numerical integration of stochastic differential equations  
*Director/Codirectores:* SANZ-SERNA, J.M.; ALAMO, A.  
*Universidad:* UNIVERSIDAD DE VALLADOLID  
*Año:* 2017

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

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

- ABDELLAOUI, B.; AGUILAR, J.A.; BARRIOS, B.; COLORADO, E.; CHARRO, F.; GARCÍA, J.; MEDINA, M.; MERCHÁN, S.; MONTORO, L.; PRIMO, A.  
Ireneo Peral: forty years as mentor, *ADVANCED NONLINEAR STUDIES*, Vol. 17, Núm. 2, 2017, pp. 217-243, ESTADOS UNIDOS DE AMERICA.
- AKHAMYTSKAYA, E.; FERNÁNDEZ, M.; RADIVOJEVIC, T.; SANZ-SERNA, J.M.  
Adaptive splitting integrators for enhancing sampling efficiency of modified Hamiltonian Monte Carlo methods in molecular simulation, *LANGMUIR*, Vol. 33, Núm. 42, 2017, pp. 11530-11542, ESTADOS UNIDOS DE AMERICA.
- ALVAREZ, C.; ARIZNABARRETA, G.; GARCIA, J.C.; MANAS, M.; MARCELLÁN, F.J.  
Christoffel transformations for matrix orthogonal polynomials in the real line and the non-Abelian 2D Toda lattice hierarchy, *INTERNATIONAL MATHEMATICS RESEARCH NOTICES*, Núm. 5, 2017, pp. 1285-1341, REINO UNIDO.
- ALVAREZ, P.; COLORADO, E.; FABELO, R.  
A higher order system of some coupled nonlinear Schrödinger and Korteweg-de Vries equations, *JOURNAL OF MATHEMATICAL PHYSICS*, Vol. 58, 2017, pp. 1-13, ESTADOS UNIDOS DE AMERICA.
- ALVAREZ, P.; WATANABE, T.

On the existence of coexistence states for an advection-cooperative system with spatial heterogeneities, *NONLINEAR ANALYSIS-THEORY METHODS & APPLICATIONS*, Vol. 152, 2017, pp. 12-37, REINO UNIDO.

- APTEKAREV, A.I.; LOPEZ-LAGOMASINO, G.; MARTINEZ, A.  
On Nikishin systems with discrete components and weak asymptotics of multiple orthogonal polynomials, *RUSSIAN MATHEMATICAL SURVEYS*, Vol. 72, Núm. 3, 2017, pp. 389-449, RUSIA.
- ASOREY, M.; CIAGLIA, F.M.; DI COSMO, F.; IBORT, L.A.; MARMO, G.  
Covariant Jacobi brackets for test particles, *MODERN PHYSICS LETTERS A*, Vol. 32, Núm. 23 (1750122), 2017, SINGAPUR.
- ASOREY, M.; CIAGLIA, M.; DI COSMO, F.; IBORT, L.A.  
Covariant brackets for particles and fields, *MODERN PHYSICS LETTERS A*, Vol. 32, Núm. 19 (1750100), 2017, SINGAPUR.
- ASOREY, M.; IBORT, L.A.; SPIVAK, A.  
Admissible boundary conditions for Hamiltonian field theories, *INTERNATIONAL JOURNAL OF GEOMETRIC METHODS IN MODERN PHYSICS*, Vol. 14 (1740006), Núm. 8, 2017, SINGAPUR.
- BAUTISTA, M. A.; IBORT, L.A.; LAFUENTE, J.; LOW, R.  
A conformal boundary for space-times based on light-like geodesics: the 3-dimensional case, *JOURNAL OF MATHEMATICAL PHYSICS*, Vol. 58, Núm. 2 (022503), 2017, ESTADOS UNIDOS DE AMERICA.
- BAYONA, V.; FLYER, N.; FORNBERG, B.; BARNETT, G.A.  
On the role of polynomials in RBF-FD approximations: II. numerical solution of elliptic PDEs, *JOURNAL OF COMPUTATIONAL PHYSICS*, Vol. 332, 2017, pp. 257-273, ESTADOS UNIDOS DE AMERICA.
- BOU, N.; SANZ-SERNA, J.M.  
Randomized hamiltonian Monte Carlo, *ANNALS OF APPLIED PROBABILITY*, Vol. 27, Núm. 4, 2017, pp. 2159-2194, ESTADOS UNIDOS DE AMERICA.
- BRANAS, P.; RODRIGUEZ, I.; SANCHEZ, A.  
Humans expect generosity, *Scientific Reports*, Vol. 7, 2017, REINO UNIDO.
- BUENO, M.I.; DOPICO, F. M.; FURTADO, S.  
Linearizations of hermitian matrix polynomials preserving the sign characteristic, *SIAM JOURNAL ON MATRIX ANALYSIS AND APPLICATIONS*, Vol. 38, Núm. 1, 2017, pp. 249-272, ESTADOS UNIDOS DE AMERICA.
- CAMPOS, C.M.; SANZ-SERNA, J.M.  
Palindromic 3-stage splitting integrators, a roadmap, *JOURNAL OF COMPUTATIONAL PHYSICS*, Vol. 346, 2017, pp. 340-355, ESTADOS UNIDOS DE AMERICA.
- CAMPOS, R.G.; MARCELLÁN, F.J.  
Quadratures and integral transforms arising from generating functions, *APPLIED MATHEMATICS AND COMPUTATION*, Vol. 297, 2017, pp. 8-18, ESTADOS UNIDOS DE AMERICA.

- CARBALLOSA, W.; RODRIGUEZ, J. M.; SIGARRETA, J.M.; TORRES, Y.  
Alliance polynomial of regular graphs, *DISCRETE APPLIED MATHEMATICS*, Vol. 225, 2017, pp. 22-32, HOLANDA - PAISES BAJOS.
- CASTILLO, K.; MARCELLÁN, F.J.; J. Rivero-Dones  
On perturbed orthogonal polynomials on the real line and the unit circle via Szego's transformation, *APPLIED MATHEMATICS AND COMPUTATION*, Vol. 302, 2017, pp. 97-110, ESTADOS UNIDOS DE AMERICA.
- CATALAN, P.; ARIAS, C.F.; CUESTA, J.A.; MANRUBIA, S.  
Adaptive multiscales: an up-to-date metaphor to visualize molecular adaptation, *Biology Direct*, Vol. 12, Núm. 7, 2017, pp. 1-15, REINO UNIDO.
- CHARTIER, P.; MURUA, A.; SANZ-SERNA, J.M.  
Erratum to: Higher-Order Averaging, Formal Series and Numerical Integration II: The Quasi-Periodic Case, *FOUNDATIONS OF COMPUTATIONAL MATHEMATICS*, Vol. 17, Núm. 2, 2017, pp. 625-626, ESTADOS UNIDOS DE AMERICA.
- CIAGLIA, F.M.; DI COSMO, F.; FELICE, D.; MANCINI, S.; MARMO, G.; PEREZ, J.M.  
Hamilton-Jacobi approach to potential functions in information geometry, *JOURNAL OF MATHEMATICAL PHYSICS*, Vol. 58, Núm. 6, 2017, ESTADOS UNIDOS DE AMERICA.
- CIAGLIA, F.M.; DI COSMO, F.; IBORT, L.A.; LAUDATO, M.; MARMO, G.  
Dynamical vector fields on the manifold of quantum states, *OPEN SYSTEMS & INFORMATION DYNAMICS*, Vol. 24, Núm. 3 (1740003), 2017.
- CIAGLIA, F.M.; DI COSMO, F.; IBORT, L.A.; MARMO, G.  
Dynamical aspects in the quantizer-dequantizer formalism, *ANNALS OF PHYSICS*, Vol. 385, 2017, pp. 769-781, ESTADOS UNIDOS DE AMERICA.
- CIAGLIA, F.M.; IBORT, L.A.; MARMO, G.  
Geometrical structures for classical and quantum probability spaces, *INTERNATIONAL JOURNAL OF QUANTUM INFORMATION*, Vol. 15, Núm. 8 (1740007), 2017, ESTADOS UNIDOS DE AMERICA.
- CUESTA, J.A.; MANRUBIA, S.  
Enumerating secondary structures and structural moieties for circular RNAs, *JOURNAL OF THEORETICAL BIOLOGY*, Vol. 419, 2017, pp. 375-382, ESTADOS UNIDOS DE AMERICA.
- DELGADO, M.; IBORT, L.A.; RODRIGUEZ, T.  
Solving quantum optimal control problems using Clebsch variables and Lin constraints, *Journal of Physics A-Mathematical and Theoretical*, Vol. 51, Núm. 3 (035302), 2017, REINO UNIDO.
- DIAZ, A.; MARTINEZ-RATON, Y.  
Role of length polydispersity in the phase behavior of freely rotating hard-rectangle fluids, *PHYSICAL REVIEW E*, Vol. 95, Núm. 5(052702), 2017, pp. 1-14, ESTADOS UNIDOS DE AMERICA.
- DMYTRYSHYN, A.; DOPICO, F. M.  
Generic complete eigenstructures for sets of matrix polynomials with bounded rank and degree, *LINEAR ALGEBRA AND ITS APPLICATIONS*, Vol. 535, 2017, pp. 213-230, ESTADOS UNIDOS DE AMERICA.

AMERICA.

- GARCIA, A.G.; HERNÁNDEZ, M.A.; PÉREZ, G.  
Sampling in unitary invariant subspaces associated to LCA groups, *Results in Mathematics*, Vol. 72, Núm. 4, 2017, pp. 1725-1745, SUIZA.
- GARCIA, A.G.; MUÑOZ, M.J.  
Sampling formulas involving differences in shift-invariant subspaces: a unified approach, *NUMERICAL FUNCTIONAL ANALYSIS AND OPTIMIZATION*, Vol. 39, Núm. 6, 2017, pp. 667-688, ESTADOS UNIDOS DE AMERICA.
- GARCÍA, M.A.; RICKARDS, J.; CUERNO, R.; TREJO, R.; CAÑETAS, J.; DE LA VEGA, L.R.; RODRÍGUEZ, L.  
Surface morphologies of Ti and Ti-Al-V bombarded by 1.0-MeV Au+ Ions, *Physical Review Applied*, Vol. 8, Núm. 6 (064027), 2017, ESTADOS UNIDOS DE AMERICA.
- GONZALEZ, M.; BORONDO, F.; MARTINEZ-RATON, Y.; VELASCO, E.  
Clustering in vibrated monolayers of granular rods, *Soft Matter*, Vol. 13, Núm. 14, 2017, pp. 2571-2582, REINO UNIDO.
- GONZALEZ, M.; MARTINEZ-RATON, Y.; VELASCO, E.  
Dynamical properties of heterogeneous nucleation of parallel hard squares, *Soft Matter*, Vol. 13, Núm. 48, 2017, pp. 9246-9258, REINO UNIDO.
- GRANADOS, A.; PESTANA, D.; PORTILLA, A.; RODRIGUEZ, J. M.  
Gromov hyperbolicity in Mycielskian graphs, *Symmetry-Basel*, Vol. 9, Núm. 8, 2017, SUIZA.
- GURIN, P.; VARGA, S.; GONZALEZ, M.; MARTINEZ-RATON, Y.; VELASCO, E.  
Ordering of hard rectangles in strong confinement, *JOURNAL OF CHEMICAL PHYSICS*, Vol. 146, Núm. 13 (134503), 2017, ESTADOS UNIDOS DE AMERICA.
- HERNÁNDEZ, F.L.; SEMENOV, E.M.; TRADACETE, P.  
Interpolation and extrapolation of strictly singular operators between L-p spaces, *ADVANCES IN MATHEMATICS*, Vol. 316, 2017, pp. 667-690, ESTADOS UNIDOS DE AMERICA.
- HERNÁNDEZ, J.C.; REYES, R.; RODRIGUEZ, J. M.; SIGARRETA, J.M.  
Mathematical properties on the hyperbolicity of interval graphs, *Symmetry-Basel*, Vol. 9 (255), Núm. 11, 2017, pp. 1-13, SUIZA.
- HERNÁNDEZ, J.C.; RODRIGUEZ, J. M.; SIGARRETA, J.M.  
On the geometric-arithmetic index by decompositions-CMMSE, *JOURNAL OF MATHEMATICAL CHEMISTRY*, Vol. 55, Núm. 7, 2017, pp. 1376-1391, ESTADOS UNIDOS DE AMERICA.
- HERNÁNDEZ, J.C.; RODRIGUEZ, J. M.; SIGARRETA, J.M.; TORRES, Y.; VILLETÀ, M.D.C.  
Gromov Hyperbolicity of Regular Graphs, *ARS COMBINATORIA*, Vol. 130, 2017, pp. 395-416, CANADA.
- HERNÁNDEZ, P.; MARTÍNEZ, G.; MUÑOZ, M.; SANCHEZ, A.

Equilibrium characterization of networks under conflicting preferences, *ECONOMICS LETTERS*, Vol. 155, 2017, pp. 154-156, SUIZA.

- HERNANDEZ, V.; PESTANA, D.; RODRIGUEZ, J. M.  
On a classical theorem on the diameter and minimum degree of a graph, *ACTA MATHEMATICA SINICA-ENGLISH SERIES*, Vol. 33, Núm. 11, 2017, pp. 1477-1503, CHINA.
- IBORT, L.A.; LOPEZ, A.; MORO, J.  
A new algorithm for computing branching rules and Clebsch-Gordan coefficients of unitary representations of compact groups, *JOURNAL OF MATHEMATICAL PHYSICS*, Vol. 58, Núm. 10 (101702), 2017, ESTADOS UNIDOS DE AMERICA.
- IBORT, L.A.; SPIVAK, A.  
Covariant Hamiltonian field theories on manifolds with boundary: Yang-Mills theories, *Journal of Geometric Mechanics*, Vol. 9, Núm. 1, 2017, pp. 47-82, ESTADOS UNIDOS DE AMERICA.
- IRANZO, J.; CUESTA, J.A.; MANRUBIA, S.; KATSNELSON, M.I.; KOONIN, E.V.  
Disentangling the effects of selection and loss bias on gene dynamics, *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA (PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AME)*, Vol. 114, Núm. 28, 2017, pp. E5616-E5624, ESTADOS UNIDOS DE AMERICA.
- KOVALEVA, A.; IRISHINA, N.; PEREIRA, A.; CUESTA, T.; ORTIZ, L.  
Methotrexate-treated ectopic pregnancy: beta human chorionic gonadotropin serum changes as a success predictor using a mathematical model validation, *European Journal of Obstetrics & Gynecology and Reproductive Biology (EUROPEAN JOURNAL OF OBSTETRICS GYNECOLOGY AND REPRODUCTIVE BIOLOGY)*, Vol. 210, 2017, pp. 35-38, HOLANDA - PAISES BAJOS.
- LÓPEZ, J.; MOLINA MEYER, M.; RABINOWITZ, P.H.  
Global bifurcation diagrams of one node solutions in a class of degenerate boundary value problems, *DISCRETE AND CONTINUOUS DYNAMICAL SYSTEMS-SERIES B*, Vol. 22, Núm. 3, 2017, pp. 923-946, ESTADOS UNIDOS DE AMERICA.
- LÓPEZ, J.; TRADACETE, P.  
Shellable weakly compact subsets of  $C[0,1]$ , *MATHEMATISCHE ANNALEN*, Vol. 367, Núm. 3-4, 2017, pp. 1777-1790, ALEMANIA.
- LOPEZ, L.F.; CAPASSO, V.; ALVARO, M.; CARRETERO, M.; TERRAGNI, F.  
The mathematical modelling of tumor-induced angiogenesis, *Mathematical Biosciences and Engineering*, Vol. 14, Núm. 1, 2017, pp. 45-66, ESTADOS UNIDOS DE AMERICA.
- LOPEZ-LAGOMASINO, G.; ZALDIVAR, Y.  
Inverse results on row sequences of Hermite-Padé Approximation, *Proceedings of the Steklov Institute of Mathematics*, Vol. 298, Núm. 1, 2017, pp. 152-169, RUSIA.
- MANRUBIA, S.; CUESTA, J.A.  
Distribution of genotype network sizes in sequence-to-structure genotype - phenotype maps, *Journal of the Royal Society Interface*, Vol. 14, Núm. 129, 2017, REINO UNIDO.

- MAÑAS, J.F.; MARCELLÁN, F.J.; MORENO, J.J.  
Asymptotics for varying discrete Sobolev orthogonal polynomials, *APPLIED MATHEMATICS AND COMPUTATION*, Vol. 314, 2017, pp. 65-79, ESTADOS UNIDOS DE AMERICA.
- MARCELLÁN, F.J.; ABDESSADEK, S.  
Linear combinations of d-orthogonal polynomials, *Bulletin of the Malaysian Mathematical Sciences Society*, 2017, pp. 1-30, MALASIA.
- MARCELLÁN, F.J.; MORENO, J.J.  
What is... a Sobolev orthogonal polynomial?, *Notices of the American Mathematical Society*, Vol. 64, Núm. 8, 2017, pp. 873-875.
- MARCELLÁN, F.J.; RANGA, A.S.  
Sobolev orthogonal polynomials on the unit circle and coherent pairs of measures of the second kind, *Results in Mathematics*, Vol. 71, Núm. 3-4, 2017, pp. 1127-1149, SUIZA.
- MARRIAGA, M.E.; PÉREZ, T.E.; PINAR, M.A.  
Three Term Relations for a Class of Bivariate Orthogonal Polynomials, *Mediterranean Journal of Mathematics*, Vol. 14, Núm. 2, 2017, SUIZA.
- MARTI, F.P.; SANCHEZ, A.  
Improving transportation networks: effects of population structure and decision making policies, *Scientific Reports*, Vol. 7, 2017, REINO UNIDO.
- MATSUZAKI, K.; RODRIGUEZ, J. M.  
Planar Riemann surfaces with uniformly distributed cusps: parabolicity and hyperbolicity, *MATHEMATISCHE NACHRICHTEN*, Vol. 290, Núm. 7, 2017, pp. 1097-1112, ALEMANIA.
- MAZZOLI, M.; SANCHEZ, A.  
Equilibria, information and frustration in heterogeneous network games with conflicting preferences, *JOURNAL OF STATISTICAL MECHANICS-THEORY AND EXPERIMENT*, Vol. 17, 2017, REINO UNIDO.
- MOSCOSO, M. A.; NOVIKOV, A.; PAPANICOLAU, G.; TSOGKA, C.  
Multifrequency interferometric imaging with intensity-only measurements, *SIAM Journal on Imaging Sciences*, Vol. 10, Núm. 3, 2017, pp. 1005-1032, ESTADOS UNIDOS DE AMERICA.
- MURUA, A.; SANZ-SERNA, J.M.  
Word series for dynamical systems and their numerical integrators, *FOUNDATIONS OF COMPUTATIONAL MATHEMATICS*, Vol. 17, Núm. 3, 2017, pp. 675-712, ESTADOS UNIDOS DE AMERICA.
- NAVARRO, H.D.; MIRITELLO, G.; CANALES, A.; MORO, E.  
Temporal patterns behind the strength of persistent ties, *EPJ Data Science*, Vol. 31, 2017, ALEMANIA.
- OIKHBERG, T.; TRADACETE, P.  
Almost band preservers, *POSITIVITY*, Vol. 21, Núm. 4, 2017, pp. 1393-1423, HOLANDA - PAISES BAJOS.



- OIKHBERG, T.; TRADACETE, P.  
Almost disjointness preservers, *CANADIAN JOURNAL OF MATHEMATICS-JOURNAL CANADIEN DE MATHÉMATIQUES*, Vol. 69, Núm. 3, 2017, pp. 650-686, CANADA.
- ORRILLO, P.A.; SANTALLA, S. N.; CUERNO, R.; VAZQUEZ BURGOS, L.; RIBOTTA, S.B.; GASSA, L.M.; MOMPEAN, F.J.; SALVAREZZA, R.C.; VELA, M.E.  
Morphological stabilization and KPZ scaling by electrochemically induced co-deposition of nanostructured NiW alloy films, *Scientific Reports*, Vol. 7, Núm. (17997), 2017, pp. 1-12, REINO UNIDO.
- PASCAZIO, S.; PEPE, F.V.; PEREZ, J.M.  
Huygens' principle and Dirac-Weyl equation, *European Physical Journal Plus*, Vol. 132, Núm. 6, 2017, ITALIA.
- PEREDA, M.; BRANAS, P.; RODRIGUEZ, I.; SANCHEZ, A.  
The emergence of altruism as a social norm, *Scientific Reports*, Vol. 7, 2017, REINO UNIDO.
- PEREDA, M.; VILONE, D.  
Social Pressure and Environmental Effects on Networks: A Path to Cooperation, *Games*, Vol. 1, Núm. 8, 2017.
- PEREDA, M.; ZURRO, D.; SANTOS, J.I.; BRIZ I GODINO, I.; ALVAREZ, M.; CARO, J.; GALAN, J.M.  
Emergence and Evolution of Cooperation Under Resource Pressure, *Scientific Reports*, Vol. 7, 2017, REINO UNIDO.
- PEREZ, J.M.  
Dirac-like operators on the Hilbert space of differential forms on manifolds with boundaries, *INTERNATIONAL JOURNAL OF GEOMETRIC METHODS IN MODERN PHYSICS*, Vol. 14, Núm. 8, 2017, SINGAPUR.
- PLANCHUELO, G.; CATALAN, P.; DELGADO, J.A.; MURCIANO, A.  
Estimating wind dispersal potential in *Ailanthus altissima*: The need to consider the three-dimensional structure of samaras, *PLANT BIOSYSTEMS*, Vol. 151, Núm. 2, 2017, pp. 316-322.
- RODRIGUEZ, J. M.; RODRIGUEZ, J.A.; SIGARRETA, J.M.  
New inequalities involving the geometric-arithmetic index, *MATCH-COMMUNICATIONS IN MATHEMATICAL AND IN COMPUTER CHEMISTRY*, Vol. 78, Núm. 2, 2017, pp. 361-374, REPUBLICA DE SERBIA.
- RODRIGUEZ, J. M.; SIGARRETA, J.M.  
New results on the harmonic index and its generalizations, *MATCH-COMMUNICATIONS IN MATHEMATICAL AND IN COMPUTER CHEMISTRY*, Vol. 78, Núm. 2, 2017, pp. 387-404, REPUBLICA DE SERBIA.
- RODRIGUEZ, J. M.; SIGARRETA, J.M.  
The hyperbolicity constant of infinite circulant graphs, *Open Mathematics*, Vol. 15, Núm. 1, 2017, pp. 800-814, POLONIA.

- SANA, P.; VAZQUEZ BURGOS, L.; CUERNO, R.; SARKAR, S.  
Collective evolution of submicron hillocks during the early stages of anisotropic alkaline wet chemical etching of Si(100) surfaces, *JOURNAL OF PHYSICS D-APPLIED PHYSICS*, Vol. 50, Núm. 43, 2017, pp. 1-9, REINO UNIDO.
- SANTALLA, S. N.; RODRIGUEZ, J.; CELI, A.; CUERNO, R.  
Topology and the Kardar-Parisi-Zhang universality class, *JOURNAL OF STATISTICAL MECHANICS-THEORY AND EXPERIMENT*, Núm. (023201), 2017, pp. 1-20, REINO UNIDO.
- SPEE, C.; VICENTE, J.I.D.; SAUERWEIN, D.; KRAUS, B.  
Entangled pure state transformations via local operations assisted by finitely many rounds of classical communication, *PHYSICAL REVIEW LETTERS*, Vol. 118, Núm. 4, 2017, pp. 040503-1-040503-5, ESTADOS UNIDOS DE AMERICA.
- TERAN, F.D.; DOPICO, F. M.; LANDSBERG, J.M.  
An explicit description of the irreducible components of the set of matrix pencils with bounded normal rank, *LINEAR ALGEBRA AND ITS APPLICATIONS*, Vol. 520, 2017, pp. 80-103, ESTADOS UNIDOS DE AMERICA.
- TERAN, F.D.; DOPICO, F. M.; PEREZ, J.  
Eigenvalue condition numbers and pseudospectra of Fiedler matrices, *CALCOLO*, Vol. 54, Núm. 1, 2017, pp. 319-365, ITALIA.
- TRADACETE, P.; VILLANUEVA, I.  
Radial continuous valuations on star bodies, *JOURNAL OF MATHEMATICAL ANALYSIS AND APPLICATIONS*, Vol. 454, Núm. 2, 2017, pp. 995-1018, ESTADOS UNIDOS DE AMERICA.
- VAZQUEZ, J.L.; ARTURO DE PABLO; QUIRÓS, F.; RODRIGUEZ, A.  
Classical solutions and higher regularity for nonlinear fractional diffusion equations, *JOURNAL OF THE EUROPEAN MATHEMATICAL SOCIETY*, Vol. 19, Núm. 7, 2017, pp. 1949-1975.
- VICENTE, J.I.D.; SPEE, C.; SAUERWEIN, D.; KRAUS, B.  
Entanglement manipulation of multipartite pure states with finite rounds of classical communication, *PHYSICAL REVIEW A*, Vol. 95, Núm. 1, 2017, ESTADOS UNIDOS DE AMERICA.
- YATSYSHIN, P.; PARRY, A.O.; RASCON, C.; KALLIADASIS, S.  
Classical density functional study of wetting transitions on nanopatterned surfaces, *JOURNAL OF PHYSICS-CONDENSED MATTER*, Vol. 29, Núm. 9 (094001), 2017, pp. 1-8, REINO UNIDO.

## Colaboraciones en obras colectivas

- CASTILLO, K.; MARCELLÁN, F.J.; J. Rivero-Dones  
*On Co-polynomials on the Real Line and the Unit Circle*, en: Operations research, engineering, and cyber security: trends in applied mathematics and technology, SPRINGER, SUIZA, pp. 69-94, 2017.
- RODRIGUEZ, J. M.; SIGARRETA, J.M.  
*The harmonic index*, en: Bounds in chemical graph theory. Basics, UNIVERSITY OF KRAGUJEVAC AND FACULTY OF SCIENCE KRAGUJEVAC, REPUBLICA DE SERBIA, pp. 229-281, 2017.

## Ponencias y Comunicaciones a congresos

- ALVAREZ, P.  
*Dynamical behaviour of several problems with heterogeneities*, Congreso RSME-UMA, Buenos Aires, ARGENTINA, 2017.
- ALVAREZ, P.  
*Optimal regularity for a fourth-order thin film equation in  $R^N$* , 4º Congreso Jóvenes Investigadores RSME, VALENCIA, ESPAÑA, 2017.
- ANGUAS, L.M.; DOPICO, F. M.  
*The action of Möbius transformations on the eigenvalue condition numbers and the backward errors of polynomial eigenvalue problems*, XXV Congreso de Ecuaciones Diferenciales y Aplicaciones / XV Congreso de Matemática Aplicada (CEDYA + CMA 2017), CARTAGENA, ESPAÑA, 2017.
- ANTONIONI, A.; PEREDA, M.; CRONIN, K.A.; TOMASSINI, M.; SANCHEZ, A.  
*Cooperation-driven hierarchy is interpreted as good reputation and does not increase prosociality*, European Symposium Series on Societal Challenges in Computational Social Science, 2017: Inequality and Imbalance, London, REINO UNIDO, 2017.
- ARES, S.  
*Formation and maintenance of nitrogen fixing cell patterns in filamentous cyanobacteria*, International workshop on genetic and metabolic engineering of microalgae, MADRID, ESPAÑA, 2017.
- ARTURO DE PABLO  
*Regularity theory for nonlocal filtration equations*, V International Symposium on Nonlinear PDEs & Free Boundary Problems, BUENOS AIRES, ARGENTINA, 2017.
- ARTURO DE PABLO  
*Nonlocal operators of order near zero*, RSME-UMA 2017, Buenos Aires, ARGENTINA, 2017.
- BAYONA, V.  
*Seminar at the Fluid and Aerodynamics Research Group*, Seminar at the Fluid and Aerodynamics Research Group, University of Bristol (UK, BRISTOL, REINO UNIDO, 2017.
- BAYONA, V.  
*Observations on the use of RBF-FD augmented with polynomials for the numerical solution of elliptic PDEs*, Computational Math Seminar, Colorado School of Mines (CO), USA, Colorado, ESTADOS UNIDOS DE AMERICA, 2017.
- BAYONA, V.  
*RBF-FD approximations based on PHS with polynomial augmentation for the numerical solution of elliptic PDEs*, Localized Kernel-Based Meshless Methods for Partial Differential Equations ICERM, Rhode Island, ESTADOS UNIDOS DE AMERICA, 2017.
- BRANDLE, C.  
*On unbounded solutions of ergodic problems for non-local Hamilton-Jacobi equations*, LXVI Reunión de Comunicaciones Científicas en el Primer Encuentro Conjunto de la Real Sociedad Matemática Española y la Unión Matemática Argentina, Buenos Aires, ARGENTINA, 2017.

- CASTRO, M.; MUÑOZ, J.M.; CUERNO, R.; RENEDO, J.  
*Symmetry of surface nanopatterns induced by ion-beam sputtering*, Nanopatterning2017: Nanoscale Pattern Formation at Surfaces, *HELSINKI, FINLANDIA*, 2017.
- CATALAN, P.; MANRUBIA, S.; CUESTA, J.A.  
*Promiscuity of function, changing environments, and molecular evolution*, FisEs 2017, *SEVILLA, ESPAÑA*, 2017.
- COLORADO, E.  
*Results on existence of Vector Bound and Ground state solutions on Systems of coupled NLS and NLS-KdV equations*, New trends in Partial differential Equations, *GRANADA, ESPAÑA*, 2017.
- COLORADO, E.  
*Vector positive solutions for systems of coupled NLS and NLS-KdV equations*, Two nonlinear days in Urbino 2017, *URBINO, ITALIA*, 2017.
- CUERNO, R.  
*Nanoscale pattern formation: an interplay between hard and soft condensed matter physics*, 4th International Conference on Nano Structuring by Ion Beams (ICNIB 2017), *Indore, Madhya Pradesh, INDIA*, 2017.
- CUERNO, R.  
*The importance of being integrable: 30+1 years of the KPZ equation*, XXI Congreso de Física Estadística FisEs 2017, Sevilla, 30 de marzo a 1 de abril de 2017, *SEVILLA, ESPAÑA*, 2017.
- CUERNO, R.  
*Nanoscale pattern formation: an interplay between hard and soft condensed matter physics*; en: Nanopatterning2017: 9th International Workshop on Nanoscale Pattern Formation at Surfaces; FOR3NANO: Formation of 3D Nanostructures by Ion Beams, 26-30 June 2017, Helsinki, Finland: book of abstracts, *FINLANDIA*, 2017.
- DE LAS HERAS, D.; RENNER, J.; GONZALEZ, M.; BORONDO, F.; MARTINEZ-RATON, Y.; VELASCO, E.  
*Confinement-induced topological defects in a tetratic liquid crystal*, 10th Liquid Matter Conference, *Ljubljana, ESLOVENIA*, 2017.
- DIAZ, A.; MARTINEZ-RATON, Y.  
*Polydisperse hard rectangles: A simple model for vibrated monolayers of granular rods*, XXI Congreso de Física Estadística FisEs' 17, *SEVILLA, ESPAÑA*, 2017.
- DIAZ, A.; PIJEIRA, H.E.; LOPEZ-LAGOMASINO, G.  
*Sobolev extremal polynomials*, 14th International Symposium on Orthogonal Polynomials, Special Functions and Applications, *KENT, REINO UNIDO*, 2017.
- DMYTRYSHYN, A.; DOPICO, F. M.  
*Generic matrix polynomials with fixed rank and fixed degree*, Minisymposium Matrix Polynomials en la 21st Conference of the International Linear Algebra Society (ILAS 2017: Connections)", *Ames, Iowa, ESTADOS UNIDOS DE AMERICA*, 2017.

- DMYTRYSHYN, A.; DOPICO, F. M.; VAN DOOREN, P.  
*Matrix polynomials with bounded rank and degree: generic eigenstructures and explicit descriptions*, INdAM (Istituto Nazionale di Alta Matematica) Meeting Structured Matrices in Numerical Linear Algebra: Analysis, Algorithms and Applications, *Cortona, ITALIA*, 2017.
- DOLDAN, V.L.; GONZALES-MORENO, E.K.; BRAVO-CANDEL, D.; MUÑOZ, J.M.; ARES, S.  
*How cyanobacteria count to 10*, Quantitative Principles in Biology - EMBO 2017, *Heidelberg, ALEMANIA*, 2017.
- DOPICO, F. M.; AMPARAN, A.; MARCAIDA, S.; ZABALLA, I.  
*Strong linearizations of rational matrices: definition, explicit constructions, and associated recovery procedures.*, Householder Symposium XX on Numerical Linear Algebra, *Blacksburg, Virginia, ESTADOS UNIDOS DE AMERICA*, 2017.
- DOPICO, F. M.; ANGUAS, L.M.; HOLLISTER, R.; MACKEY, D.S.  
*Paul Van Dooren's Index Sum Theorem and the solution of the inverse rational eigenvalue problem*, Minisymposium "Matrix Polynomials" en la "21st Conference of the International Linear Algebra Society (ILAS 2017: Connections)", *Ames, Iowa, ESTADOS UNIDOS DE AMERICA*, 2017.
- DOPICO, F. M.; LAWRENCE, P.; PEREZ, J.; VAN DOOREN, P.  
*Polynomial eigenvalue problems: linearizations and global backward error analysis*, 4th International Symposium on Riordan Arrays and Related Topics, *MADRID, ESPAÑA*, 2017.
- DOPICO, F. M.; LAWRENCE, P.; PEREZ, J.; VAN DOOREN, P.  
*Global backward error analysis of polynomial eigenvalue problems*, High Performance Computing in Science and Engineering Conference, *Ostrava Poruba, REPUBLICA CHECA*, 2017.
- DOPICO, F. M.; MACKEY, D.S.; VAN DOOREN, P.  
*Product realizations for matrix polynomials*, Householder Symposium XX on Numerical Linear Algebra, *Blacksburg, Virginia, ESTADOS UNIDOS DE AMERICA*, 2017.
- DOPICO, F. M.; QUINTANA, M.D.C.  
*Constructing new classes of strong linearizations of rational matrices*, 11th Workshop of Young Researchers in Mathematics, *MADRID, ESPAÑA*, 2017.
- FABELO, R.  
*New Trends in Partial Differential Equations. Un Homenaje a Ireneo Peral*, *GRANADA, ESPAÑA*, 2017.
- FABILA, J.S.  
*Spectral gaps and discrete magnetic Laplacians*, 11th Workshop of Young Researchers in Mathematics 2017, *MADRID, ESPAÑA*, 2017.
- GONZALES-MORENO, E.K.; BRAVO-CANDEL, D.; MUÑOZ, J.M.; ARES, S.  
*Gene regulatory networks that optimize the cost of performing a function: pattern formation in nitrogen-fixing cyanobacteria*, Modelling Biological Evolution '17, *Leicester, REINO UNIDO*, 2017.

- GONZALEZ, M.; BORONDO, F.; MARTINEZ-RATON, Y.; VELASCO, E.  
*Liquid-crystalline patterns in vibrated granular rods*, XXI Congreso de Física Estadística FisEs'17, SEVILLA, ESPAÑA, 2017.
- GONZALEZ, M.; MARTINEZ-RATON, Y.; VARGA, S.; GURIN, P.; VELASCO, E.  
*Estructura de un fluido de partículas rectangulares en un canal estrecho bidimensional*, XXI Congreso de Física Estadística FisEs'17, SEVILLA, ESPAÑA, 2017.
- GONZALEZ, M.; MARTINEZ-RATON, Y.; VELASCO, E.  
*Dynamics of heterogeneous crystallization of parallel hard squares: A dynamic density functional theory study*, XXI Congreso de Física Estadística FisEs'17, SEVILLA, ESPAÑA, 2017.
- GOYAL, S.; HERNANDEZ, P.; MARTÍNEZ-CASANOVA, G.; MOISAN, F.; MUÑOZ-HERRERA, M.; SANCHEZ, A.  
*The role of identities on the formation of social networks: experimental lessons*, Crossroads in Complex Systems, PALMA DE MALLORCA, ESPAÑA, 2017.
- GOYAL, S.; HERNANDEZ, P.; MARTÍNEZ-CASANOVA, G.; MOISAN, F.; MUÑOZ-HERRERA, M.; SANCHEZ, A.  
*Freedom of association, social cohesion and welfare*, International Meeting on Experimental and Behavioral Social Sciences (IMEBESS 2017), BARCELONA, ESPAÑA, 2017.
- GRANADOS, A.; PORTILLA, A.; PESTANA, D.; RODRIGUEZ, J. M.  
*Preservación de la función de Green en superficies de Riemann*, XVII Encuentros de Análisis Real y Complejo (EARCO 2017), SANTA CRUZ DE TENERIFE, ESPAÑA, 2017.
- GRANADOS, A.; PORTILLA, A.; PESTANA, D.; RODRIGUEZ, J. M.; TOURIS, E.  
*Isoperimetric inequalities in hyperbolic manifolds*, Fourth Summer School in Complex Analysis and Operator Theory, MADRID, ESPAÑA, 2017.
- GRANADOS, A.; PORTILLA, A.; PESTANA, D.; RODRIGUEZ, J. M.; TOURIS, E.  
*Stability of the injectivity radius under quasi-isometries and applications to isoperimetric inequalities*, 11th Workshop of Young Researchers in Mathematics, MADRID, ESPAÑA, 2017.
- GRANADOS, A.; PORTILLA, A.; PESTANA, D.; RODRIGUEZ, J. M.; TOURIS, E.  
*Stability of the injectivity radius under quasi-isometries and applications to isoperimetric inequalities*, Fourth Summer School in Complex Analysis and Operator Theory, LEGANES, ESPAÑA, 2017.
- HERNANDEZ, V.; PESTANA, D.; RODRIGUEZ, J. M.  
*On a classical theorem on the diameter and minimum degree of a graph*, XVII Encuentros de Análisis Real y Complejo (EARCO), SANTA CRUZ DE TENERIFE, ESPAÑA, 2017.
- HERNÁNDEZ, V.; PESTANA, D.; RODRIGUEZ, J. M.  
*Extremal problems on graphs involving the hyperbolicity constant*, X Encuentro Andaluz de Matemática Discreta 2017, LINEA DE LA CONCEPCION, LA, ESPAÑA, 2017.
- HERNÁNDEZ, V.; PESTANA, D.; RODRIGUEZ, J. M.  
*Several extremal problems on graphs involving the circumference, girth, and hyperbolicity constant*, XVII Encuentros de Análisis Real y Complejo (EARCO 2017), SANTA CRUZ DE TENERIFE, ESPAÑA,

2017.

- IBORT, L.A.

*Geometry and spaces of classical probability states*, Geometry and Physics, *Bologna*, ITALIA, 2017.

- IBORT, L.A.

*Covariant Brackets in Field Theories and Particle Dynamics*, New Trends in Applied Geometric Mechanics (ICMAT), *MADRID*, ESPAÑA, 2017.

- IBORT, L.A.

*Sesión Especial: Avances recientes en Geometría, Mecánica y Control*, Congreso Bienal de la RSME Bienal, *ZARAGOZA*, ESPAÑA, 2017.

- IBORT, L.A.

*V International Workshop on Mathematical Foundations of Quantum Mechanics and its applications*, V International Workshop on Mathematical Foundations of Quantum Mechanics and its applications, *MADRID*, ESPAÑA, 2017.

- IBORT, L.A.

*The covariant Hamiltonian formalism of field theories on manifolds with boundaries*, International Workshop on Quantum Physics and Information Geometry, *Policeta-San Rufo*, *Salerno*, ITALIA, 2017.

- LLEDÓ, F.

*Notions of infinity in local quantum physics*, V International Workshop on Mathematical Foundations of Quantum Mechanics and its applications, *MADRID*, ESPAÑA, 2017.

- LOPEZ-LAGOMASINO, G.

*Nikishin systems on star-like sets and associated multi-orthogonal polynomials*, AMS-MAA Joint Mathematics Meeting, *ATLANTA*, ESTADOS UNIDOS DE AMERICA, 2017.

- MACKKEY, D.S.; ANGUAS, L.M.; DOPICO, F. M.; HOLLISTER, R.

*Majorization and matrix polynomials.*, Minisymposium “Matrix Polynomials” en la “21st Conference of the International Linear Algebra Society (ILAS 2017: Connections)”., *Ames, Iowa*, ESTADOS UNIDOS DE AMERICA, 2017.

- MARCELLÁN, F.J.

*Orthogonal polynomials, zeros and electrostatics*, Conference on Point configurations and orthogonal polynomials, *CASTRO URDIALES*, ESPAÑA, 2017.

- MARCELLÁN, F.J.

*Orthogonal polynomials, Geronimus transformations and quadrature rules*, Approximation and Computation-Theory and Applications (ACTA 2017), *BELGRADO*, REPUBLICA DE SERBIA, 2017.

- MARCELLÁN, F.J.

*Christoffel transformations and matrix of measures supported in the real line*, IV Encuentro RSME-SMM, *VALLADOLID*, ESPAÑA, 2017.

- MARCELLÁN, F.J.  
*Orthogonal polynomials on the unit circle the real line and the unit circle: Szegő transformations and CMV matrices*, Workshop on Information, Orthogonality and Symmetry, GRANADA, ESPAÑA, 2017.
- MARCELLÁN, F.J.  
*Analytic properties of orthogonal polynomials in Sobolev spaces. A comparative approach with the standard case*, Contemporary Aspects of Analysis, PROTARAS, CHIPRE, 2017.
- MARCELLÁN, F.J.  
*A friendly approach to orthogonal polynomials and their applications*, 9th Pan African Congress of Mathematicians PACOM2017, ESPAÑA, 2017.
- MARTINEZ-RATON, Y.; GONZALEZ, M.; VELASCO, E.  
*Dynamics of heterogeneous nucleation of parallel hard squares using dynamical density functional theories*, Workshop on Condensed Matter Physics, Veszprém, HUNGRÍA, 2017.
- MIRITELLO, G.; CEBRIAN, M.; MORO, E.  
*What comes first? Social strength or common friends?*; en: [NetMob, 5-7 April 2017, Vodafone village, Milan: book of abstracts-Oral](#), Vodafone, 2017.
- MORO, E.  
*What comes first? Social Strength or common friends?*, International School and Conference on Network Science, NetSci2017, Indianápolis (Indiana), ESTADOS UNIDOS DE AMERICA, 2017.
- MORO, J.  
*Compensation of negativity in the Nonnegative Inverse Eigenvalue Problem*, IV Jornadas ALAMA sobre Problemas Espectrales Inversos, MADRID, ESPAÑA, 2017.
- MOSCOSO, M. A.  
*Coherent imaging without phases, Invited speaker in Waves and Imaging in Random Media*, The Institute for Computational and Experimental Research in Mathematics, Providence, ESTADOS UNIDOS DE AMERICA, 2017.
- MUÑOZ, J.M.  
*Unravelling patA gene function in Anabaena heterocyst formation*, Quantitative Principles in Biology - EMBO 2017, Heidelberg, ALEMANIA, 2017.
- MUÑOZ, J.M.; ARES, S.  
*Unravelling patA gene function in Anabaena heterocyst formation*, XXI Congreso de Física Estadística (FisEs' 17), SEVILLA, ESPAÑA, 2017.
- MUÑOZ, J.M.; CUERNO, R.; CASTRO, M.  
*Nonlinear theory of ion-induced solid flow*, 4th International Conference on Nanostructuring by Ion Beams (ICNIB 2017), INDORE, INDIA, 2017.
- NAVARRO, H.; MIRITELLO, G.; CANALES, A.; MORO, E.  
*Why people stop calling? The temporal weakness of decaying ties?*, Netmob 2017, Milán, ITALIA, 2017.



- PASCUAL, I.; AGUIRRE, J.; MANRUBIA, S.; CUESTA, J.A.  
*Modeling paradigm shifts in cultural evolution*, FisEs 2017, SEVILLA, ESPAÑA, 2017.
- PEREZ, J.; DOPICO, F. M.; LAWRENCE, P.; VAN DOOREN, P.  
*Structured and unstructured backward error analyses of linearized polynomial eigenvalue problems*, XXV Congreso de Ecuaciones Diferenciales y Aplicaciones / XV Congreso de Matemática Aplicada (CEDYA + CMA 2017), CARTAGENA, ESPAÑA, 2017.
- PEREZ, J.; DOPICO, F. M.; VAN DOOREN, P.  
*Structured backward error analyses of linearized polynomial eigenvalue problems*, Householder Symposium XX on Numerical Linear Algebra, Blacksburg, Virginia, ESTADOS UNIDOS DE AMERICA, 2017.
- PEREZ, J.; DOPICO, F. M.; VAN DOOREN, P.  
*Structured backward error analyses of linearized polynomial eigenvalue problems*, Invited Minisymposium “Matrix Polynomials” en la “21st Conference of the International Linear Algebra Society (ILAS 2017: Connections)”, Ames, Iowa, ESTADOS UNIDOS DE AMERICA, 2017.
- PEREZ, J.M.  
*An Introduction to Information Geometry*, V International Workshop on Foundations of Quantum Mechanics and Applications, MADRID, ESPAÑA, 2017.
- PEREZ, J.M.  
*Hamilton-Jacobi approach to contrast functions and geodetical motion in information geometry*, XXVI International Fall Workshop on Geometry and Physics, BRAGA, PORTUGAL, 2017.
- PIJEIRA, H.E.  
*Minicurso: Polinomios ortogonales y aplicaciones*, XIII International Scientific Research Congress, SANTO DOMINGO, REPÚBLICA DOMINICANA, 2017.
- PIJEIRA, H.E.  
*Asymptotic behavior of Sobolev extremal polynomials*, XIII International Scientific Research Congress, SANTO DOMINGO, REPÚBLICA DOMINICANA, 2017.
- QUINTANA, Y.D.C.; RODRIGUEZ, J. M.  
*Measurable diagonalization of positive definite matrices*, Congreso Bienal de la Real Sociedad de Matemáticas Española, RSME 2017, ZARAGOZA, ESPAÑA, 2017.
- RASCON, C.; PARRY, A.O.; AARTS, D.  
*Do all glasses empty when turned to the horizontal?*, XXI Congreso de Física Estadística (FISES17), SEVILLA, ESPAÑA, 2017.
- REYES, R.; RODRIGUEZ, J. M.; SIGARRETA, J.M.; VILLET, M.D.C.  
*On the hyperbolicity constant of circular-arc graphs*, X Encuentro Andaluz de Matemática Discreta 2017, LINEA DE LA CONCEPCION, LA, ESPAÑA, 2017.
- RODRIGUEZ, E.; CUERNO, R.  
*Modelling and simulation of a viscous ultrathin ferrofluid film under a magnetic field*, XIV GISC Workshop, Universidad Rey Juan Carlos, MOSTOLES, ESPAÑA, 2017.

- RODRIGUEZ, E.; CUERNO, R.  
*Dynamics of an ultrathin viscous ferrofluid film under a magnetic field*, XXI Congreso de Física Estadística FisEs 2017, SEVILLA, ESPAÑA, 2017.
- RODRIGUEZ, J. M.  
*Preservation of some isoperimetric inequalities under quasi-isometries*, Congreso Bienal de la Real Sociedad de Matemáticas Española, RSME 2017, ZARAGOZA, ESPAÑA, 2017.
- RODRIGUEZ, J. M.  
*Cheeger isoperimetric constant of Gromov hyperbolic manifolds and graphs*; en: Congreso bienal de la Real Sociedad Matemática Española, Zaragoza 30 de enero-3 de febrero de 2017, RSME 2017: libro de resúmenes, REAL SOCIEDAD MATEMATICA ESPAÑOLA,, 2017.
- RODRIGUEZ, J. M.; SÁNCHEZ, J.L.; SIGARRETA, J.M.  
*On the first general Zagreb index*, 17th International Conference Computational and Mathematical Methods in Science and Engineering CMMSE 2017, ROTA, ESPAÑA, 2017.
- RODRIGUEZ, N.; CASADO, J.; ALVAREZ, R.; CUESTA, J.A.  
*Dynamical systems with spatiotemporal periodicities through the symmetries*, Symmetry 2017- The First International Conference on Symmetry, BARCELONA, ESPAÑA, 2017.
- SANZ-SERNA, J.M.  
*Highly oscillatory delay problems*, From computation to information: recent advances in numerical analysis, Cambridge, REINO UNIDO, 2017.
- SOSA, F.E.; MORO, J.  
*Asymptotic Expansions for Eigenvalues of Multiplicatively Perturbed Matrices*, XX Householder Symposium on Numerical Linear Algebra, Blacksburg, Virginia, ESTADOS UNIDOS DE AMERICA, 2017.
- SOSA, F.E.; MORO, J.; MEHL, C.  
*Structured perturbation for eigenvalues of symplectic matrices: a multiplicative approach*, XXV Congreso CEDYA / XV CMA, CARTAGENA, ESPAÑA, 2017.
- SOSA, F.E.; MORO, J.; MEHL, C.  
*Local structured perturbation of eigenvalues of symplectic matrices: a multiplicative approach*, Minisymposium "Structured pseudospectra & stability radii: applications & computational issues", Weimar, ALEMANIA, 2017.
- STUCCHI, L.; MARTIN, S.; PASTOR, J.M.; CUESTA, J.A.; GALEANO, J.  
*Generic model of population dynamics and transitions between biological interactions*, FisEs 2017, SEVILLA, ESPAÑA, 2017.
- TAMARIT, I.; PEREDA, M.; CUESTA, J.A.; SANCHEZ, A.; DUNBAR, R.  
*Dunbar's numbers and social structure: models and experiments*, Crossroads in Complex Systems, PALMA DE MALLORCA, ESPAÑA, 2017.

- TAMARIT, I.; PEREDA, M.; CUESTA, J.A.; SANCHEZ, A.; DUNBAR, R.  
*Dunbar's numbers and social structure: Models and experiments*, International Conference on Computational Social Science (IC2S2 2017), *Colonia, ALEMANIA*, 2017.
- TERAN, F.D.  
*Polynomial root-finding using companion matrices*; en: [INdAM Meeting Structured Matrices in Numerical Linear Algebra: Analysis, Algorithms and Applications](#), Cortona, Italy, September 4-8, 2017: [Program schedule](#), ITALIA, 2017.
- TERAN, F.D.  
*Polynomial root-finding using companion matrices*, Foundations of Computational Mathematics (FoCM2017), BARCELONA, ESPAÑA, 2017.
- TERAN, F.D.; DOPICO, F. M.; MACKEY, D.S.; VAN DOOREN, P.  
*Dual minimal bases of polynomial matrices and applications*, Householder Symposium XX on Numerical Linear Algebra, Blacksburg, Virginia, ESTADOS UNIDOS DE AMERICA, 2017.
- VAN DOOREN, P.; DOPICO, F. M.  
*Robustness and perturbations of minimal bases*, Minisymposium "Matrix Polynomials" en la 21st Conference of the International Linear Algebra Society (ILAS 2017: Connections), Ames, Iowa, ESTADOS UNIDOS DE AMERICA, 2017.
- VICENTE, J.I.D.  
*Multipartite entanglement transformations with local operations and finite rounds of classical communication*, 14th Central European Quantum Information Processing Workshop (CEQIP 2017), Smolenice, ESLOVAQUIA, 2017.
- VICENTE, J.I.D.  
*Entanglement theory and entanglement measures*, V International Workshop on Mathematical Foundations of Quantum Mechanics and its Applications, MADRID, ESPAÑA, 2017.
- VICENTE, J.I.D.  
*Multipartite entanglement transformations with local operations and finite rounds of classical communication*, Información Cuántica en España (ICE-4), MADRID, ESPAÑA, 2017.
- YATSYSHIN, P.; DURAN-OLIVENCIA, M.A.; PARRY, A.O.; RASCON, C.; KALLIADASIS, S.  
*Wetting of heterogeneous substrates. A classical density-functional-theory approach*, 70th Annual Meeting of the American Physical Society Division of Fluid Dynamics (DFD 2017), Denver, Colorado, ESTADOS UNIDOS DE AMERICA, 2017.
- YATSYSHIN, P.; DURAN-OLIVENCIA, M.A.; PARRY, A.O.; RASCON, C.; KALLIADASIS, S.  
*Bifurcations of equilibrium metastable states of inhomogeneous classical fluids in contact with patterned substrates*, British Applied Mathematical Colloquium (BAMC 2017), Guildford, REINO UNIDO, 2017.
- YATSYSHIN, P.; PARRY, A.O.; RASCON, C.; KALLIADASIS, S.  
*Classical density functional study of wetting transitions on nanopatterned surfaces*, Thermodynamics 2017, Edimburgo, REINO UNIDO, 2017.
- ZALDIVAR, Y.; LOPEZ-LAGOMASINO, G.

*Inverse results on row sequences of Hermite-Padé approximation*; en: [OPSFA14: The 14th International Symposium on Orthogonal Polynomials, Special Functions and Applications, 3rd-7th July 2017, University of Kent Canterbury, UK, REINO UNIDO, 2017.](#)

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

### **Estancias en otros centros**

- CARLOS RASCON DIAZ  
*Título:* Estancia de Investigación (Visitante) en el Imperial College London, Departamento de Matemáticas  
*Duración:* 4 semanas (10 mayo - 10 junio) Tema: Adsorción de Fluidos (Wetting) en Substratos Estructurados  
*Centro Externo:* Imperial College London  
*País:* REINO UNIDO  
*Duración:* 10/05/2017 a 10/06/2017.
- ESTEBAN MORO EGIDO  
*Título:* Estancias en el MediaLab MIT (Massachusetts Institute of Technology), Estados Unidos.  
*Centro Externo:* MediaLab MIT (Massachusetts Institute of Technology)  
*País:* ESTADOS UNIDOS DE AMERICA  
*Duración:* 01/09/2016 a 31/07/2017.
- FERNANDO DE TERAN VERGARA  
*Título:* Estancia de investigación financiada por el Ministerio de Educación, Cultura y Deporte (becas "Salvador de Madariaga"). Tema: Perturbaciones de rango bajo de formas canónicas y otras aplicaciones del álgebra lineal en el ámbito de la ingeniería, la industria y la física. Lugar: Technische Universitat Berlin. Berlín (Alemania). Periodo: 1 de febrero - 28 abril de 2017  
*Centro Externo:* Technische Universitat Berlin  
*País:* ALEMANIA  
*Duración:* 01/02/2017 a 28/04/2017.
- FERNANDO LLEDO MACAU  
*Título:* Estancia de investigación de 1 mes en el Department of Mathematics, U. Durham, Reino Unido  
*Centro Externo:* UNIVERSIDAD DE DURHAM  
*País:* REINO UNIDO  
*Duración:* 01/2017 a 01/2017.
- JESUS MARIA SANZ SERNA  
*Título:* Visita a la Universidad de Rutgers  
*Centro Externo:* UNIVERSIDAD DE RUTGERS  
*País:* ESTADOS UNIDOS DE AMERICA  
*Duración:* 27/04/2017 a 09/05/2017.
- JESUS MARIA SANZ SERNA  
*Título:* Visita a la Universidad de Oxford  
*Centro Externo:* OXFORD UNIVERSITY  
*País:* REINO UNIDO  
*Duración:* 01/06/2017 a 30/06/2017.
- JESUS MARIA SANZ SERNA

*Título:* Estancia de Investigación en Rutgers University, Camden, New Jersey  
*Centro Externo:* Rutgers University  
*País:* ESTADOS UNIDOS DE AMERICA  
*Duración:* 01/11/2017 a 30/11/2017.

- **JOSE ANTONIO CUESTA RUIZ**  
*Título:* Estancia en el York Centre for Complex System Analysis (YCCSA), University of York, invitado por el profesor Richard Law.  
*Centro Externo:* University of York  
*País:* REINO UNIDO  
*Duración:* 02/06/2017 a 28/07/2017.
- **JOSE MANUEL RODRIGUEZ GARCIA**  
*Título:* Estancia de investigación en la Facultad de Matemáticas, Universidad Autónoma de Guerrero, Acapulco, México: Índices topológicos y polinomios en gráficas.  
*Centro Externo:* Universidad Autónoma de Guerrero, Acapulco, México  
*País:* MEXICO  
*Duración:* 16/07/2017 a 30/07/2017.
- **MIGUEL ANGEL MOSCOSO CASTRO**  
*Título:* Estancia en el Departamento de Matemáticas de la Universidad de Stanford  
*Centro Externo:* Universidad de Stanford  
*País:* ESTADOS UNIDOS DE AMERICA  
*Duración:* 01/07/2017 a 31/08/2017.
- **PEDRO GONZALEZ RODRIGUEZ**  
*Título:* School of Natural Sciences  
*Centro Externo:* School of Natural Sciences at U.C. Merced  
*País:* ESTADOS UNIDOS DE AMERICA  
*Duración:* 24/07/2017 a 24/08/2017.
- **RODOLFO CUERNO REJADO**  
*Título:* Estancia de investigación en el Departamento de Física Teórica, Universidad de Extremadura, Badajoz  
*Centro Externo:* UNIVERSIDAD DE EXTREMADURA  
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