



RESUMEN DE LA ACTIVIDAD INVESTIGADORA DEL DEPARTAMENTO DE SISTEMAS FÍSICOS, QUÍMICOS Y NATURALES. CURSO 2017/2018.

- . Libros (2)
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LISTA DE ARTÍCULOS PUBLICADOS:

Área de Cristalografía y Mineralogía

- J. Becerra, A.P. Zaderenko, M.J. Sayagués, R. Ortiz, P. Ortiz, Synergy achieved in silver-TiO₂ nanocomposites for the inhibition of biofouling on limestone, *Build. Environ.* 141 (2018) 80–90. doi:10.1016/j.buildenv.2018.05.020.
- Rocío Ortiz, Juan Manuel Macias-Bernal, Pilar Ortiz, (2018) "Vulnerability and buildings service life applied to preventive conservation in cultural heritage", *International Journal of Disaster Resilience in the Built Environment*, Vol. 9 Issue: 1, pp.31-47, <https://doi.org/10.1108/IJDRBE-11-2016-0047>
- Luisa Torres Barzabal, Pilar Ortiz, Dolores María Barcia. Assessment of online learning at the Andalusian virtual campus. The case of Pablo Olavide University subjects. *InterCambios: Dilemas y Transiciones de la Educación Superior*, ISSN 2301-0118, ISSN-e 2301-0126, Vol. 4, Nº. 1, 2017, 48-57.

Área de Ecología

- Juan D. Delgado, Riera, R., Rodríguez, R., González-Moreno, P. & Fernández-Palacios, J. 2017. A reappraisal of the role of humans in the biotic disturbance of islands. *Environmental Conservation* 44(4): 371-380.
- Juan D. Delgado, Federico Morelli, Natalia L. Arroyo, Jorge Durán, Alexandra Rodríguez, Antonio Rosal, María del Valle Palenzuela, Jesús D.G.P. Rodríguez. 2018. Is vertebrate mortality correlated to potential permeability by underpasses along low-traffic roads? *Journal of Environmental Management* 221: 53–62.



- Juan D. Delgado, Estefanía Abreu-Yanes, Néstor Abreu-Acosta, Manuel D. Flor, Pilar Foronda. 2017. Vertebrate Ticks Distribution and Their Role as Vectors in Relation to Road Edges and Underpasses. *Vector-Borne and Zoonotic Diseases* 17(6): 376-383.
- Ricardo A. Rodríguez, Rodrigo Riera, Juan D. Delgado. 2017. Ecology: Science or philately? An interdisciplinary analysis of sustainability by exploring if it is possible to get more and more information by reducing collateral environmental damages. *Science of the Total Environment* 596: 43-52.
- Ricardo A. Rodríguez, Janelle M. Duncan, Juan D. Delgado, Michael J. Vanni, Rodrigo Riera, Ada M. Herrera, María J. González. 2017. Assessment of ecosystem trophodynamic power: A model based on the power equation for an oscillating string. *Ecological Modelling* 362: 80-86.
- Rodrigo Riera, Ricardo A. Rodríguez, Ada M. Herrera, Juan D. Delgado, Brian D. Fath. 2017. Endorheic currents in ecology: an example of the effects from scientific specialization and interdisciplinary isolation. *Interdisciplinary Science Reviews* 43(2): 175-191.
- Ricardo A. Rodríguez, Janelle Duncan, Rodrigo Riera, Juan D. Delgado, Angel Quirós, Michael J. Vanni, Tomás Camarena, Jezahel V. Miranda, María E. Perdomo, Ada M. Herrera, María J. González. 2017. Thermostatistical distribution of a trophic energy proxy: Extension for modelling energy pyramids at the inter-taxocene scale and under non-stationary conditions. *Ecological Modelling* 361: 113-121.
- Ricardo A. Rodríguez, Janelle M. Duncan, Michael J. Vanni, Alexey V. Melkikh, Juan D. Delgado, Rodrigo Riera, Ada M. Herrera, Tomás Camarena, Ángel Quirós, José M. Fernández-Palacios, Jezahel V. Miranda, María E. Perdomo, María J. Fernández-Rodríguez, Antonia Jiménez-Rodríguez, Rüdiger Otto, Carlos G. Escudero, Rafael M. Navarro-Cerrillo, María J. González. 2017. Exploring the analytical consequences of ecological subjects unwittingly neglected by the mainstream of evolutionary thought. *Ecological Modelling* 355: 70-83.
- Rodríguez, R.A., Duncan, J.M., Vanni, M.J., Melkikh, A.V., Delgado, J.D., Riera, R., Herrera, A.M., Camarena, T., Quirós, A., Fernández-Palacios, J.M., Miranda, J.V., Perdomo, M.E., Fernández-Rodríguez, M.J., Jiménez-Rodríguez, A., Otto, R., Escudero, C.G., Navarro-Cerrillo, R.M. & González, M.J. To leap or not to leap: a recurrent evolutionary issue by contrasting recent ecosystem models with some of the foundational principles of modern evolutionary synthesis. *Ecological Modelling* (2017)
- F.G. Fermoso, M.J Fernández-Rodríguez, A. Jiménez-Rodríguez, A. Serrano & R. Borja. Suitability of olive oil washing water as electron donor in a fed batch operating bioelectrochemical systems *Grasas y Aceites* 68 (2) (2017)
- Sanchez-Salguero J. Julio Camarero, Vicente Rozas, Mar Génova, José M. Olano, Alberto Arzac, Antonio Gazol, Leocadia Caminero, Ernesto Tejedor, Martín de Luis, Juan C. Linares. Resist,



recover or both? Growth plasticity in response to drought is geographically structured and linked to intra-specific variability in *Pinus pinaster*. *Journal of Biogeography*. 2018. 45 (5), 1126-1139. <https://doi.org/10.1111/jbi.13202>.

- Gazol, A., Jesus Julio Camarero, Sergio M. Vicente-Serrano, Raúl Sánchez-Salguero, Emilia Gutiérrez, Martin de Luis, Gabriel Sangüesa-Barreda, Klemen Novak, Vicente Rozas, Pedro A. Tíscar, Juan C. Linares, Natalia Martín-Hernández, Edurne Martínez del Castillo, Montse Ribas, Ignacio García-González, Fernando Silla, Alvaro Camisón, Mar Génova, José M. Olano, Luis A. Longares, Andrea Hevia, Miquel Tomás-Burguera, J. Diego Galván. Forest resilience to drought varies across biomes. *Global Change Biology*. 2018. 24 (5), 2143-2158. <https://doi.org/10.1111/gcb.14082>.
- Sánchez-Salguero, R., Camarero, J. J., Carrer, M., Gutiérrez, E., Alla, A. Q., Andreu-Hayles, L., Hevia, A., Koutavas, A., Martínez-Sancho, E., Nola, P., Papadopoulos, A., Pasho, E., Toromani, E., Carreira, J. A., Linares, J. C. 2017. Climate extremes and predicted warming threaten Mediterranean Holocene fir forest refugia. *PNAS*. <https://doi.org/10.1073/pnas.1708109114>
- Lechuga, V.; Carraro, V.; Viñegla, B.; Carreira, J. A.; Linares, J.C. 2017. Managing drought-sensitive forests under global change. Low competition enhances long-term growth and water uptake in *Abies pinsapo*. *Forest Ecology and Management*. 406, 72-82. <https://doi.org/10.1016/j.foreco.2017.10.017>.
- Stojanovic, M., Sánchez-Salguero, R., Levanic, T., Szatniewska, J., Pokorný, R., Linares, J. C. Forecasting tree growth in coppiced and high forests in the Czech Republic. The legacy of management drives the coming *Quercus petraea* climate responses. *Forest Ecology and Management*. 2017. 405, 56-68. <https://doi.org/10.1016/j.foreco.2017.09.021>.
- Matías L., Juan Carlos Linares, Ángela Sánchez-Miranda, Alistair S. Jump. Contrasting growth forecasts across the geographical range of Scots pine due altitudinal and latitudinal differences in climatic sensitivity. *Global Change Biology*. 2017. 23, 4106-4116. <https://doi.org/10.1111/gcb.13627>.
- Hosseini A., Hosseini S. M., Linares J. C. Site factors and stand conditions associated with Persian oak decline in Zagros mountain forests. *Forest Systems*. 2017. 26 (3), e014. <https://doi.org/10.5424/fs/2017263-11298>.
- Avila J. M., Linares J. C., García-Nogales A., Sánchez M. E., Gómez-Aparicio. L. Across-scale patterning of plant-soil-pathogen interactions in *Quercus suber* decline. *European Journal of Forest Research*. 2017. 136, 677-688. <https://doi.org/10.1007/s10342-017-1064-1>.
- Sánchez-Salguero R., Jesus Julio Camarero, Emilia Gutiérrez, Fidel González Rouco, Antonio Gazol, Gabriel Sangüesa-Barreda, Laia Andreu-Hayles, Juan Carlos Linares and Kristina Seftigen Assessing forest vulnerability to climate warming using a process-based model of tree growth: bad



prospects for rear-edges. *Global Change Biology.* 2017. 23, 2705-2719.
<https://doi.org/10.1111/gcb.13541>.

- Cailleret M., Steven Jansen, Elisabeth M. R. Robert, Lucía Desoto, Tuomas Aakala, Joseph A. Antos, Barbara Beikircher, Christof Bigler, Harald Bugmann, Marco Caccianiga, Vojtěch Čada, Jesus J. Camarero, Paolo Cherubini, Hervé Cochard, Marie R. Coyea, Katarina Čufar, Adrian J. Das, Hendrik Davi, Sylvain Delzon, Michael Dorman, Guillermo Gea-Izquierdo, Sten Gillner, Laurel J. Haavik, Henrik Hartmann, Ana-Maria Hereş, Kevin R. Hultine, Pavel Janda, Jeffrey M. Kane, Vyacheslav I. Kharuk, Thomas Kitzberger, Tamir Klein, Koen Kramer, Frederic Lens, Tom Levanic, Juan Carlos Linares, Francisco Lloret, Raquel Lobo-Do-Vale, Fabio Lombardi, Rosana López Rodríguez, Harri Mäkinen, Stefan Mayr, Ilona Mészáros, Juha M. Metsaranta, Francesco Minunno, Walter Oberhuber, Andreas Papadopoulos, Mikko Peltoniemi, Any M. Petritan, Brigitte Rohner, Gabriel Sangüesa-Barreda, Dimitrios Sarris, Jeremy M. Smith, Amanda B. Stan, Frank Sterck, Dejan B. Stojanović, Maria L. Suarez, Miroslav Svoboda, Roberto Tognetti, José M. Torres-Ruiz, Volodymyr Trotsiuk, Ricardo Villalba, Floor Vodde, Alana R. Westwood, Peter H. Wyckoff, Nikolay Zafirov, Jordi Martínez-Vilalta. A synthesis of radial growth patterns preceding tree mortality. *Global Change Biology.* 2017. 23, 1675-1690. <https://doi.org/10.1111/gcb.13535>.
- Camarero, J. J., Juan Carlos Linares, Ana I. García-Cervigón, Enric Batllori, Isabel Martínez, Emilia Gutiérrez. Back to the future: the responses of alpine treelines to climate warming are constrained by the current ecotone structure. *Ecosystems.* 2017. 20 (4), 683–700. <https://doi.org/10.1007/s10021-016-0046-3>.
- Morales-Reyes, Z., Sánchez-Zapata, J.A., Sebastián-González, E., Botella, F., Carrete, M. & Moleón, M. 2017. Scavenging efficiency and red fox abundance in Mediterranean mountains with and without vultures. *Acta Oecologica.*
- Cardador, L., Lattuada, M., Strubbe, D., Tella, J.L., Reino, L., Figueira, R. & Carrete, M. 2017. Regional bans on wild-bird trade modify invasion risks at a global scale. *Conservation Letters.*
- Rebolo-Ifrán, N., Tella, J.L. & Carrete M. 2017. Urban conservation hotspots: predation release allows the grassland-specialist burrowing owl to perform better in the city. *Scientific Reports.*
- Carrete, M. & Tella, J.L. 2017. Behavioral correlations associated with fear of humans differ between rural and urban burrowing owls. *Frontiers in Ecology and Evolution* 5: 54.
- Carrete, M., Centeno-Cuadros, A., Méndez, M., Agudo, R. & Donázar, J.A. 2017. Low heritability in tool use skills in a wild vulture population. *Animal Behavior.*
- Carboneras, C., Genovesi, P., Vilà, M., Blackburn, T.M., Carrete, M., Clavero, M., D'hondt, B., Fernández Orueta, J., Gallardo, B., Geraldes, P., González, P., Gregory, R.D., Nentwig, W., Paquet, J.Y., Pyšek, P., Rabitsch, W., Ramírez, I., Scalera, R., Tella, J.L., Walton, P., & Wynde R.



2017. A shadow list of invasive alien species to assist the effective implementation of EU legislation. *Journal of Applied Ecology*.

- Abellán, P., Tella, J.L., Carrete, M., Cardador, L. & Anadón, J.D. 2017. Climatic matching drives spread rate but not establishment success in recent unintentional bird introductions. *PNAS*.
- Mueller, J.C., Edelaar, P., Baños-Villalba, A., Carrete, M., Potti, J., Blas, J., Tella, J.L. & Kempenaers, B. 2017. Selection on a behaviour-related gene during the first stages of the biological invasion pathway. *Molecular Ecology*.
- Centeno-Cuadros, A., Tella, J.L., Delibes, M., Edelaar, P. & Carrete, M. 2017. Validation of loop-mediated isothermal amplification (LAMP) for fast and portable sex determination across the phylogeny of birds. *Molecular Ecology Resources*.
- Hernández-Brito, D., Carrete, M., Ibanez, C., Juste, J. & Tella, J.L. 2018. Nest-site competition and killing by invasive parakeets cause the decline of a threatened bat population. *Royal Society Open Science*.
- Mueller, J.C., Kuhl, H., Boerno, S., Tella, J.L., Carrete, M. & Kempenaers, B. 2018. Evolution of genomic variation in the burrowing owl in response to recent colonization of urban areas. *Proceedings of the Royal Society B*.
- Sebastián-González, E., Pérez-García, J.M., Carrete, M., Donázar, J.A. & Sánchez-Zapata, J.A. 2018. Using network analysis to identify indicator species and reduce collision fatalities at wind farms. *Biological Conservation*.
- Morillas, L., Roales, J., Portillo-Estrada, M., Gallardo, A. Wetting-drying cycles influence on soil respiration in two Mediterranean ecosystems. (2017) *European Journal of Soil Biology*, 82, pp. 10-16.
- Escudero A., Mediavilla S., Olmo M., Villar R. y Merino J. Coexistence of Deciduous and Evergreen oak species in mediterranean environments: costs associated with the leaf and root traits of both habits. En Gil-Pelegrín E., et al., (eds.). *Oaks physiological ecology. Exploring the functional diversity of genus Quercus L.* Springer International Publishing. 2017. *Tree Physiology Series 7*. p:195-237.

Área de Física Aplicada

- Andreas Athenodorou, Philippe Boucaud, Feliciano de Soto, José Rodríguez-Quintero, Savvas Zafeiropoulos. "Instanton dominance over as at low momenta from lattice QCD simulations at Nf=0, Nf=2+1 and Nf=2+1+1" *EPJ Web Conf.* 175 (2018) 12011 DOI: 10.1051/epjconf/201817512011



- Andreas Athenodorou, Philippe Boucaud, Feliciano De Soto, José Rodríguez-Quintero, Savvas Zafeiropoulos. "On the zero-crossing of the three-gluon Green's function from lattice simulations" EPJ Web Conf. 175 (2018) 12012 DOI: 10.1051/epjconf/201817512012
- Athenodorou, Ph. Boucaud, F. De Soto, J. Rodríguez-Quintero, S. Zafeiropoulos. "Instanton liquid properties from lattice QCD" JHEP 1802 (2018) 140 DOI: 10.1007/JHEP02(2018)140
- Ph. Boucaud, F. De Soto, J. Rodríguez-Quintero, S. Zafeiropoulos. "Comment on Lattice gluon and ghost propagators and the strong coupling in pure SU(3) Yang-Mills theory: Finite lattice spacing and volume effects" Phys.Rev. D96 (2017) no.9, 098501 DOI: 10.1103/PhysRevD.96.098501
- Ph. Boucaud, F. De Soto, J. Rodríguez-Quintero, S. Zafeiropoulos. "Refining the detection of the zero crossing for the three-gluon vertex in symmetric and asymmetric momentum subtraction schemes" Phys.Rev. D95 (2017) no.11, 114503 DOI: 10.1103/PhysRevD.95.114503
- Cazzaniga, M. Rebai, J. Garcia Lopez, M.C. Jimenez-Ramos, M. Girolami, D.M. Trucchi, A. Bellucci, C.D. Frost, M. Garcia-Munoz, M. Nocente, M. Tardocchi, G. Gorini; "Charge collection uniformity and irradiation effects of synthetic diamond detectors studied with a proton micro-beam", (2017), Inst. and Methods in Physics Research, B, 405, pp. 1-10, DOI: 10.1016/j.nimb.2017.05.015
- Díaz-Francés, J.A., Cortés-Giraldo, M.A., Jiménez-Ramos, M.C., Hurtado-Bermúdez, S.; "Simulation of the response of a PIPS detector using GEANT4 code" (2017), Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 875, pp. 21-26. DOI: 10.1016/j.nima.2017.08.033
- Galdon-Quiroga, J., Rivero-Rodriguez, J.F., Garcia-Munoz, M., Birkenmeier, G., Viezzner, E., Ayllon-Guerola, J., Dunne, M., Garcia-Lopez, J., Gonzalez-Martin, J., Jimenez-Ramos, M.C., Rodriguez-Ramos, M., Sanchis-Sanchez, L., Wolfrum, E., Team, T.A.U.; "Conceptual design of a scintillator based Imaging Heavy Ion Beam Probe for the ASDEX Upgrade tokamak", (2017), Journal of Instrumentation. 12(8),C08023, DOI: 10.1088/1748-0221/12/08/C08023
- García-Tenorio, R., Manjón, G., Vioque, I., Jiménez.Ramos, M.C., Mantero, J., Díaz-Francés, I.; "Grey monazite (rare earths) mining in centre of Spain: Characterization and pre-operational radiological evaluation", (2018), Chemosphere 208, 691-697, DOI: 10.1016/j.chemosphere.2018.06.032
- M.C. Gordillo and F. de Soto. "Fermionization and Mott insulator formation in fermion trimers loaded in one-dimensional optical lattices". Phys. Rev. A 96 013614 1-5 (2017).
- Gordillo, M.C. "States of one-dimensional fermion clusters with repulsive interactions in optical lattices" Phys. Rev. A 96 033630 1-5 (2017).
- Gordillo M.C and Boronat. J."Fluid and registered phases in the second layer of ^3He on graphite" Phys. Rev. B Rapid Communications 97 201410(R) 1-5 (2018).



- Hurtado, S.; "GEANT4 simulation of the response of a liquid scintillation counter", (2017), Journal of Instrumentation, 12 (9), art. no. P09021, DOI: 10.1088/1748-0221/12/09/P09021
- Hurtado-Bermúdez, S., Villa-Alfageme, M., Mas, J.L., Alba, M.D.; "Comparison of solvent extraction and extraction chromatography resin techniques for uranium isotopic characterization in high-level radioactive waste and barrier materials", (2018), Applied Radiation and Isotopes, 137, pp. 177-183. DOI: 10.1016/j.apradiso.2018.04.008
- López-Lora, M., Chamizo, E., Villa-Alfageme, M., Hurtado-Bermúdez, S., Casacuberta, N., García-León, M.; "Isolation of ^{236}U and $^{239,240}\text{Pu}$ from seawater samples and its determination by Accelerator Mass Spectrometry", (2018), Talanta, 178, pp. 202-210. DOI: 10.1016/j.talanta.2017.09.026
- Malagón, S.A. Bota, G. Torrens, X. Gili, J. Praena, B. Fernández, M. Macías, J.M. Quesada, Carlos Guerrero Sanchez, M.C. Jiménez-Ramos, J. García López, J.L. Merino, J. Segura; "Soft Error Rate Comparison of 6T and 8T SRAM ICs using Mono-energetic Proton and Neutron Irradiation Sources"; (2017), Microelectronics Reliability. 78, 38-45, DOI: 10.1016/j.microrel.2017.07.093
- M. Rodríguez-Ramos, M. García-Munoz, M.C. Jimenez-Ramos, J. Garcia Lopez, J.Galdon-Quiroga, L. Sanchis-Sanchez, J. Ayllon-Guerola, M. Faitsch, J. Gonzalez-Martin, A. Hermann, P. de Marne, J.F. Rivero-Rodriguez, B. Sieglin, A. Snicker, and the ASDEX Upgrade Team; "First absolute measurements of fast-ion losses in the ASDEX Upgrade tokamak", (2017), Plasma Physics and Controlled Fusion, 59, Issue 10, 105009, DOI: 10.1088/1361-6587/aa7e5f
- M. Rodríguez-Ramos, M.C. Jiménez-Ramos, M. García-Munoz, J. García López; "Temperature response of several scintillator materials to light ions" (2017), Inst. and Methods in Physics Research, B, 403, pp. 7-12. DOI: 10.1016/j.nimb.2017.04.084
- M. Seimetz, P. Bellido, P. García, P. Mur, A. Iborra, A. Soriano, T. Hülber, J. García López, M. C. Jiménez-Ramos, R. Lera, A. Ruiz-de la Cruz, I. Sánchez, R. Zaffino, L. Roso, and J. M. Benlloch; "Spectral characterization of laser-accelerated protons with CR-39 nuclear track detector", (2018), Review of Scientific Instruments, 89, 023302, DOI: 10.1063/1.5009587
- Villa-Alfageme, M., Chamizo, E., Santos-Arévalo, F.J., López-Gutierrez, J.M., Gómez-Martínez, I., Hurtado-Bermúdez, S. "Natural and artificial radionuclides in a marine core. First results of ^{236}U in North Atlantic Ocean sediments", (2018), Journal of Environmental Radioactivity, 186, pp. 152-160. DOI: 10.1016/j.jenvrad.2017.10.001
- Ziad, N., Mas, J. L, Naouli, J., Villa, M., Hurtado, S., Ghazi, M., Laissaoui, A. "A Baseline Study on Levels of Uranium, Thorium and Lead Isotope Ratios in Sediment from the Sebou Estuary in the North-West of Morocco", (2018), Journal of Materials and Environmental Sciences, Volume 9, Issue 5, Page 1562-1567, DOI:10.26872/jmes.2018.9.5.172



Área de Física de la Tierra

- Gallego D., García-Herrera R., Peña-Ortiz C. and Ribera P. "The steady increase of the Australian Summer Monsoon in the last 200 years". *Scientific Reports*, 7, Article number: 16166. 2017. doi: 10.1038/s41598-017-16414-1.
- Troncoso A., Ribera P., Asencio-Cortés G., Vega I. and Gallego D. "Imbalanced Classification Techniques for Monsoon Forecasting based on a new climatic time series". *Environmental Modelling and Software*. 2017. doi: 10.1016/j.envsoft.2017.11.024.
- Vega I., Gallego D., Ribera P., Gómez-Delgado FdP., García-Herrera R. and Peña-Ortiz C. "Reconstructing the Western North Pacific Summer Monsoon since the late 19th century". *Journal of Climate*, 31, 355-368, 2018. doi: 10.1175/JCLI-D-17-0336.1.

Área de Geodinámica Externa

- Rodríguez-Rodríguez, M., Martos-Rosillo, S., Fernández-Ayuso, A. y Aguilar, R. (2018). "Aplicación de un modelo de flujo y del método de Darcy segmentado al cálculo de la descarga en una laguna somera. Caso de la laguna de Santa Olalla." *Geogaceta* 63.
- Fernández-Ayuso, A. y Rodríguez-Rodríguez, M. (2018). "Cálculo de parámetros hidrogeológicos mediante métodos de influencia mareal en la zona de recarga del acuífero de arenas de Doñana (Huelva, España)" *Geogaceta* 64.
- Delgado, J., Barba-Brioso, C. y Boski, T. (2018). Caracterización de residuos mineros y diseño preliminar de un sistema de acopio controlado en el distrito minero de Zaruma-Portovelo (SE Ecuador). *Geogaceta* 64.
- Delgado, J., Ayala, D. y Simón-Páez, H. (2018). Sistema de tratamiento para mejorar la calidad de aguas de drenaje de pasivos ambientales mineros en la cuenca del Río Puyango (Ecuador). *Geogaceta* 64.
- Moral, F. (2018). Concentración de iones mayoritarios en las aguas de la red fluvial de la cuenca del Guadalquivir y sus condicionantes geológicos. *Geogaceta* 64.

Área de Geodinámica Interna

- Ramírez Prior, A., Díaz Azpiroz, M., Balanyá Roure, J.C. (2018). Caracterización geológica del cinturón de pliegues y cabalgamientos bético en el transecto del "Caminito del Rey" (Málaga). Bases para la interpretación de su patrimonio geológico. *Geogaceta*, 63, 75-78.



- Jiménez-Bonilla, A., Expósito, I., Balanyá, J.C., and Díaz-Azpiroz, M. (2017). Strain partitioning and relief segmentation in arcuate fold-and-thrust belts: a case study from the Western Betics. *Journal of Iberian Geology*, 43, 497-518.
- Jiménez-Bonilla A., Crespo-Blanc A., Balanyá J.C., Expósito I., and Díaz-Azpiroz M. (2017). Brittle-ductile analogue modelling of piedmont arcs: the influence of pushing-from-behind in gravity-driven models. *Bulletino di Geofisica Teorica e Applicata*, 58, 1, 1-15. DOI: 10.4430/bgta0187.
- Crespo-Blanc A., Jiménez-Bonilla A., Balanyá J.C., Expósito I., y Díaz-Azpiroz M. (2017). Influence of diapirs on the development of non-cylindrical arcuate fold-and-thrust belts: Results from analogue models of progressive arcs. *Geogaceta*, 62, 19-22.
- Crespo-Blanc A., Comas M. y Balanyá J.C. (2017). El Arco de Gibraltar: un poco más cerca de entender su evolución tectónica. *Revista de la AEPECT*, 25.2, 244-246.

Área de Química Física

- Cuetos, Alejandro; Dennison, Matthew; Masters, Andrew; Patti, Alessandro Phase behaviour of hard board-like particles. *SOFT MATTER* 13, 2017, pp: 4720-4732
- Patti, Alessandro; Cuetos, Alejandro. Monte Carlo simulation of binary mixtures of hard colloidal cuboids. *Mol. Sim.* 44, 2018, pp: 516-522
- Acemel, Rafael D.; Govantes Fernando; Cuetos Alejandro. Computer simulation study of early bacterial biofilm development. *Scientific Reports* 8, 2018, pp: 5340
- Corbett, Daniel; Cuetos, Alejandro; Dennison, Matthew; Patti, Alessandro; Dynamic Monte Carlo algorithm for out-of-equilibrium processes in colloidal dispersions. *Physical Chemistry Chemical Physics*, 2018, 20, 15118 - 15127
- Avilés-Moreno, Juan Ramón; Berden, Giel; Oomens, Jos; Martínez-Haya, Bruno. 2017. Isolated complexes of the amino acid arginine with polyether and polyamine macrocycles, the role of proton transfer *Physical Chemistry Chemical Physics*. 19: 31345-31351.
- Avilés-Moreno, Juan Ramón; Gámez Francisco; Berden, Giel; Oomens, Jos; Martínez-Haya, Bruno. 2017. Isolated alkali cation complexes of the antibiotic ionophore nonactin: correlation with crystalline structures. *Physical Chemistry Chemical Physics*. 19: 14984-14991.
- Martínez-Haya, Bruno; Avilés-Moreno, Juan Ramón; Hamad-Gómez, Said. 2017. On the ionophoric selectivity of nonactin and related macrotetrolide derivatives. *Physical Chemistry Chemical Physics* 19: 1288-1297.
- Avilés-Moreno, Juan Ramón; Martínez-Haya, Bruno. 2017. Benchmark Ditopic Binding of Cl- and Cs+ by the Macrocycle Hexacyclen. *ChemPhysChem*. 18: 1324-1332.



- Luna-Triguero, Azahara; Vicent-Luna, José Manuel; Poursaeidesfahani, Ali; Vlugt, Thijs J. H.; Sánchez de-Armas, Rocío; Gómez-Álvarez, Paula; Calero, Sofía. 2018. Improving Olefin Purification Using Metal Organic Frameworks with Open Metal Sites. *ACS Applied Materials & Interfaces*. 10: 16911-16917.
- Min, Jung Gi; Luna-Triguero, Azahara; Byun, Youngchul; Balestra, Salvador R. G.; Vicent-Luna, Jose Manuel; Calero, Sofía; Hong, Suk Bong; Camblor, Miguel A. 2018. Stepped Propane Adsorption in Pure-Silica ITW Zeolite. *Langmuir*. 34: 4774-4779.
- Luna-Triguero, Azahara; Vicent-Luna, José Manuel; Calero, Sofía. 2018. Phase Transition Induced by Gas Adsorption in Metal-Organic Frameworks. *Chemistry-A European Journal*. doi:10.1002/chem.201801157.
- Dubbeldam, David; Calero, Sofía; Vlugt, Thijs J.H. 2018. iRASPA: GPU-accelerated visualization software for materials scientists. *Molecular Simulation*. 44: 653-676.
- Ślawek, Andrzej; Vicent-Luna, José Manuel; Marszałek, Bartosz; Makowski, Wacław; Calero, Sofía. 2017. Quasi-Equilibrated Thermodesorption Combined with Molecular Simulation for Adsorption and Separation of Hexane Isomers in Zeolites MFI and MEL. *The Journal of Physical Chemistry C*. 121: 19226-19238.
- Vicent-Luna, José Manuel; Romero-Enrique, José Manuel; Calero, Sofía; Anta, Juan Antonio. 2017. Micelle Formation in Aqueous Solutions of Room Temperature Ionic Liquids: A Molecular Dynamics Study. *The Journal of Physical Chemistry B*. 121: 8348-8358.
- Vicent-Luna, José Manuel; Azaceta, Eneko; Hamad, Said; Ortiz-Roldán, José Manuel; Tena-Zaera, Ramón; Calero, Sofía; Anta, Juan Antonio. 2018. Molecular Dynamics Analysis of Charge Transport in Ionic-Liquid Electrolytes Containing Added Salt with Mono, Di, and Trivalent Metal Cations. *ChemPhysChem*, doi:10.1002/cphc.201701326.
- Ślawek, Andrzej; Vicent-Luna, José Manuel; Marszałek, Bartosz; Makowski, Wacław; Calero, Sofía. 2017. Ordering of n-Alkanes Adsorbed in the Micropores of AlPO4-5: A Combined Molecular Simulations and Quasi-Equilibrated Thermodesorption Study. *The Journal of Physical Chemistry C*, 121: 25292-25302.
- Sánchez-Laínez, Javier; Veiga, Adrián; Zornoza-Encabo, Beatriz; Rodríguez-Gómez Balestra, Salvador; Hamad, Said; Ruiz-Salvador, A. Rabdel; Calero, Sofía; Téllez Ariso, Carlos; Coronas, Joaquín. 2017. Tuning the Separation Properties of Zeolitic Imidazolate Framework Core-Shell Structures via Post-Synthetic Modification. *The Journal of Materials Chemistry A*. 5: 25601-25608
- Bueno-Perez, Rocio; R. G. Balestra, Salvador; Camblor, Miguel A.; Min, Jung Gi; Hong, Suk Bong; Merkling, Patrick J.; Calero, Sofía. 2018. Influence of Flexibility on the Separation of Chiral Isomers in the STW-Type Zeolite. *Chemistry- A European Journal*. 24: 4121-4132



- Matito-Martos, Ismael; Rahbari, A; Martin-Calvo, Ana; Dubbeldam, David; Vlugt, Thijs J.H.; Calero, Sofía. 2018. Adsorption Equilibrium of Nitrogen Dioxide in Porous Materials. *Phys. Chem. Chem. Phys.* 20: 4189-4199
- Lahoz-Martín, Francisco D.; Martín-Calvo, Ana; Gutiérrez-Sevillano, Juan José; Calero, Sofía. 2018. Effect of Light Gases in the Ethane/Ethylene Separation Using Zeolitic Imidazolate Frameworks. *The Journal of Physical Chemistry C.* 122: 8637-8646
- Martin-Calvo, Ana; Van der Perre, S.; Claessens, B.; Calero, Sofía; Denayer, J. F. M. 2018. Unravelling the influence of carbon dioxide on the adsorptive recovery of butanol from fermentation broth using ITQ-29 and ZIF-8. *Physical Chemistry Chemical Physics.* 20: 9957-9964, DOI: 10.1039/c8cp01034j
- Martin-Calvo, Ana; Gutiérrez-Sevillano, Juan José; Matito-Martos, Ismael; Vlugt, Thijs J. H.; Calero, Sofía. 2018. Identifying Zeolite Topologies for Storage and Release of Hydrogen. *The Journal of Physical Chemistry C.* DOI10.1021/acs.jpcc.8b02263
- Rodríguez-Albelo, L. M.; López-Maya, E.; Hamad, Said; Ruiz-Salvador, A. Rabdel; Calero, Sofía; Navarro, J.A.R. 2017. Selective sulfur dioxide adsorption on crystal defect sites on an isoreticular Metal Organic Framework series. *Nature Communications.* 8: 14457. DOI:10.1038/ncomms14457
- Aziz, A.; Ruiz-Salvador, A. Rabdel; Hernandez, N.C.; Calero, Sofía; Hamad, Said; Grau-Crespo, R. 2017. Porphyrin-based metal-organic frameworks for solar fuel synthesis photocatalysis: band gap tuning via iron substitution. *J. Mater. Chem. A*, 5: 11894-11904. DOI:10.1039/C7TA01278K
- Gómez-Álvarez, Paula; Ruiz-Salvador, A. Rabdel; Hamad, Said; and Calero, Sofía. 2017. Importance of Blocking Inaccessible Voids on Modeling Zeolite Adsorption: Revisited. *J. Phys. Chem. C.* 121: 4462–4470. DOI:10.1021/acs.jpcc.7b00031
- Perez-Carbajo, J., Matito-Martos, I., Balestra, S.R.G., Tsampas, M., Van De Sanden, M.C.M., Delgado, J.A., Águeda, V.I., Merkling, P.J., Calero, S. Zeolites for CO₂-CO-O₂ separation to obtain CO₂-neutral fuels. *ACS Applied Materials and Interfaces* (2018). DOI: 10.1021/acsami.8b04507.
- JM Oliva, JM Ríos de la Rosa, MJ Sayagués, JA Sánchez-Alcázar, PJ Merkling and AP Zaderenko. Solvent-assisted *in situ* synthesis of cysteamine-capped silver nanoparticles. *Adv. Nat. Sci: Nanosci. Nanotechnol.* 9(2017), 015001-1-015001-10. Doi: 10.1088/2043-6254/aa9de9.
- J. Becerra; AP. Zaderenko; MJ. Sayagués; R. Ortiz; P. Ortiz. Synergy achieved in silver-TiO₂ nanocomposites for the inhibition of biofouling on limestone. *Building and Environment* 141(2018), 80-90.
- C. Caro; F. Gámez; AP. Zaderenko. Preparation of Surface-Enhanced Raman Scattering Substrates Based on Immobilized Silver-Capped Nanoparticles. *Journal of Spectroscopy.* (2018), 1-9. Doi.org/10.1155/2018/4127108.



- Oropesa-Ávila M, de la Cruz-Ojeda P, Porcuna J, Villanueva-Paz M, Fernández-Vega A, de la Mata M, de Lavera I, Rivero JM, Luzón-Hidalgo R, Álvarez-Córdoba M, Cotán D, Zaderenko AP, Cordero MD, Sánchez-Alcázar JA. Two coffins and a funeral: early or late caspase activation determines two types of apoptosis induced by DNA damaging agents. *Apoptosis*. 22(2017), 421-436. Doi: 10.1007/s10495-016-1337-z.
- JR. Aguilera, V. Venegas, JM. Oliva, MJ. Sayagués, M. de Miguel, JA. Sánchez-Alcázar, M. Arévalo-Rodríguez and AP. Zaderenko. Targeted multifunctional tannic acid nanoparticles, *RSC Advances*. 6(2016), 7279-7287. Doi: 10.1039/C5RA19405A.
- Trejos, Víctor M.; Santos, Andrés; Gámez, Francisco. Vapor-liquid equilibrium and equation of state of two-dimensional fluids from a discrete perturbation theory. *Journal of Chemical Physics* 148, 2018, 194505.
- Mora-Boza, Ana; Lopes-Costa, Tânia; Gámez, Francisco; Pedrosa, José María. Unveiling the interaction of DNA-octadecylamine at the air-water interface by ultraviolet-visible reflection spectroscopy. *RSC Advances* 7, 2017, 5872-5879.
- Lobato, Marcos D.; Gámez, Francisco; Lago, Santiago; Pedrosa, José María. The influence of the polarity of fractionated asphaltenes on their Langmuir film properties. *Fuel* 200, 2017, 162-170.
- Roales, Javier; Moscoso, Francisco G.; Gámez, Francisco; Lopes-Costa, Tânia; Sousarei, Ahmad; Casado, Santiago; Castro-Smirnov, José R.; Cabanillas-González, Juan; Almeida, José; Queirós, Carla; Cunha-Silva, Luís; Silva, Ana Margarida D; Pedrosa, José María. Preparation of metal-organic framework films by soft-imprinting for sensor device applications. *Materials* 10(9), 2017, 992.
- Guillén, María G.; Gámez, Francisco; Suárez, Belén; Quieròs, Carla; Silva, Ana Margarida G.; Barranco, Ángel; Sánchez-Valencia, Juan Ramón; José María Pedrosa; Lopes-Costa, Tânia. Preparation and optimization of fluorescent thin films of rosamine-SiO₂/TiO₂ composites for NO₂ sensing. *Materials* 10, 2017, 124.
- Guillén, María G.; Gámez, Francisco; Lopes-Costa, Tânia; Castro-Smirnov, José R; Wannemacher, Reinhold; Cabanillas-González, Juan; Pedrosa, José María. Amplified Spontaneous Emission in Action: Sub-ppm Optical Detection of Acid Vapors in Poly[2-methoxy-(2-ethylhexyloxy)-1,4-phenylenevinylene] Thin Films. *Sensors and Actuators: B. Chemical* 255, 2017, 1354-1361.
- Guillén, María G., Gámez, Francisco; Roales, Javier; Lopes-Costa, Tânia; Pinto, Sara M.A.; Calvete, Mario J. F.; Pereira, Mariette M.; Pedrosa, José María. Molecular-based selection of porphyrins towards the sensing of explosives in the gas phase. *Sensors and Actuators: B. Chemical* 260, 2018, 116-124.



- Guillén, María G.; Suárez, Belén; Roales, Javier; Gámez, Francisco; Vargas, Alejandro P.; Moscoso, Francisco G.; Lopes-Costa, Tânia; Queirós, Carla; Silva, Ana Margarida G; Pedrosa, José M. Fluorescent Rosamine/TiO₂ Composite Films for the Optical Detection of NO₂. *J. Sensors*, 2018, ID 7954839.
- Queirós, Carla; Leite, Andreia; Cunha-Silva, Luís; de Castro, Baltazar; Rangel, María; Sousaraei, Ahmad; Cabanillas-González, Juan; Gámez, Francisco; Jamardo, Estefanía; Vargas, Alejandro P.; Moscoso, Francisco G.; Lopes-Costa, Tânia; Pedrosa, José María; Silva, Ana Margarida G. Synthesis and characterization of two fluorescent isophthalate rosamines: from solution to immobilization in solid substrates. *Dyes and Pigments* 157, 2018, 405-414.

Área de Zoología

- Márquez-Rodríguez, Joaquín, Francisco Campos, Miguel Ángel Vega-Maqueda y Manuel Ferreras-Romero. Contribución al conocimiento de las poblaciones reproductoras de *Cordulegaster boltonii* (Donovan, 1807) (Odonata: Cordulegastridae) en Sierra Morena occidental. 2017. *Arquivos Entomológicos* 18: 275-277.
- Ruiz-García, Antonio, Carmen Zamora-Muñoz, Andrés Garzón & Manuel Ferreras-Romero. Description of the last instar larva of *Stenophylax espanioli* Schmid 1957 (Trichoptera: Limnephilidae) from southern Iberian Peninsula with the barcode of the species and synoptic key for identification of the known *Stenophylax* larvae from the Iberian Peninsula. 2018. *Zootaxa* 4388 (2): 292-300.
- Korbaa, Manel, Manuel Ferreras-Romero, Antonio Ruiz-García & Moncef Boumaiza. TSOI – a new index based on Odonata populations to assess the conservation relevance of watercourses in Tunisia. 2018. *Odonatologica* 47 (1/2): 43-72.
- Martínez-Pita Inés y Francisco José García. Embryonic Abnormalities of Two Seaslug Species from South Spain. 2017. *Thalassas* 33:109–115
- Bernáldez-Sánchez, E. 2017. Bone Loss from carcasses in Mediterranean ecosystems. *Palaios*. 32, pp. 1 – 7.
- García-Viñas, E. & Bernáldez-Sánchez, E. 2017. Skeleton decay of *Cervus elaphus hispanicus* carcasses in Mediterranean ecosystems. Biostratinomy at Sierra Norte of Seville Natural Park (SW Spain). *Archaeological and Anthropological Sciences*. DOI: 10.1007/s12520-017-0513-6
- Mireia Casas-Marce; Marmesat, E.; Soriano Sancha, L.; Martínez Cruz,B.; Lucena, M.; Nocete Calvo, F.; Rodríguez-Hidalgo, A.; Canals, A.; Nadal, J.; Detry, C.; Bernáldez-Sánchez, E.; Fernández-Rodríguez, C.; Pérez-Ripoll, M. ; Stiller, M.; Hofreiter, M.; Rodríguez, A.; Revilla, E.; Delibes, M.; Godoy López, J.A. Spatio-temporal dinamic of genetic variation in the router to



extinction reconstructed with ancient DNA. Molecular Biology and Evolution. 34, pp. 2893 - 2907. 2017.

- García-Viñas, E.; Gómez Tubío, B.; Ortega-Feliú, I.; Bernáldez-Sánchez, E. Análisis píxe en muestras óseas subfósiles: ensayo de un protocolo de preparación. DigitAR – Revista Digital de Arqueología, Arquitectura e Artes. 3, pp. 37 - 46. 2016.