

Parte A. DATOS PERSONALES		Fecha del CVA	23/03/2022
Nombre y apellidos	Carmen Calvo Jurado		
Núm. identificación del investigador	Researcher ID	0000-0001-9842-081X	
	Código Orcid	L-6038-2014	

A.1. Situación profesional actual

Organismo	Universidad de Extremadura		
Dpto./Centro	Matemáticas/Escuela Politécnica		
Dirección	Avda. De la Universidad, s/n		
Teléfono	927257100. Ext. 51680	correo electrónico	ccalvo@unex.es
Categoría profesional	Titular de Universidad	Fecha inicio	24/02/08
Espec. cód. UNESCO	1202.20		
Palabras clave	Análisis y Análisis funcional. Ecuaciones en Derivadas Parciales		

A.2. Formación académica (título, institución, fecha)

Licenciatura/Grado/Doctorado	Universidad	Año
Doctor en Ciencias Matemáticas	Sevilla	2003

A.3. Indicadores generales de calidad de la producción científica (véanse instrucciones)

Tres sexenios de investigación referentes a los períodos 2001-2006, 2007-2012, 2013-2018.

Parte B. RESUMEN LIBRE DEL CURRÍCULUM (máximo 3500 caracteres, incluyendo espacios en blanco)

Carmen Calvo-Jurado received her PhD degree in Mathematics at School of Mathematics of the University of Sevilla (Spain) in 2003. She worked as assistant professor and researched in the University of Sevilla and in the University of Jaén in Spain. She is currently an Associate Professor at the Department of Mathematics of the University of Extremadura in Cáceres (Spain) and has 20+ years of experience in university-level teaching.

Her research interests are in the areas of applied mathematics including the homogenization of PDE and its applications to optimal design problems. She is also interested in the study of the effective properties of composite materials and in this area some results related both layered media and fibre reinforced materials have been deduced in the elasticity and the conductivity contexts. Recently she has started to work in a new research line regarding to Structural Health Monitoring in order to identify the location and severity of damage in various civil engineering structures.

Following these research lines, Dr. Calvo has published well positioned research articles in international journals in the frame of pure and applied mathematics working as part of multi-disciplinary teams founded by the Spanish government.

She has reviewed several manuscripts of mathematical journals. Some of them are: Applied Mathematical Modelling, International Journal of Computer Mathematic, Journal of Computational and Applied Mathematics, World Journal of Modeling and Simulation, Discrete and Continuous Dynamical Systems-A.

She has visited as researcher several prestigious institutions, including the Laboratoire Jacques-Louis Lions at the Pierre et Marie Curie University (Paris 6), the School of Mathematic at the University of Manchester and the University College of London (UCL). She has presented numerous contributions in international applied mathematics conferences and also has participated as a member of the organizing committee of some mathematical international meetings.

Parte C. MÉRITOS MÁS RELEVANTES (ordenados por tipología)

C.1. Publicaciones

C.1.1. C. Calvo-Jurado, P. Roldán-Oliden, Numerical computation of effective anisotropic elastic properties of geosynthetics-reinforced pavements, *Applied Mathematical Modelling*, 96 (2021) 719-732. **Q1**

C.1.2. Carmen Calvo-Jurado, Juan Casado-Díaz, Manuel Luna-Layne, A justification of the Darcy law for a suspension of not self-similar solid particles non-periodically distributed, *Journal of Computational and Applied Mathematics*, 404, 2022, 113415, **Q1**.

C.1.3. Calvo-Jurado, C., Casado-Díaz, J., Luna-Layne, M., A Brinkman law in the homogenization of the stationary Navier–Stokes system in a non-periodic porous medium, 2019, *Journal of Computational and Applied Mathematics* 354, 191-197. **Q1**.

C.1.4. Rico-Gallego, J.A., Díaz-Martín, J.C., Calvo-Jurado, C., Moreno-Álvarez, S., García-Zapata, J.L., 2019, *The Journal of Supercomputing*, 75, (3) 1654—1669. **Q2**.

C.1.5. Rico-Gallego, J.A., Díaz-Martín, J.C., Moreno-Álvarez, S., Calvo-Jurado, C., García-Zapata, J.L., Performance Evaluation of Model-Driven Partitioning Algorithms for Data-Parallel Kernels on Heterogeneous Platforms, <https://doi.org/10.1002/cmm4.1017>

C. 1.6. Calvo-Jurado, C., Parnell, W.J., The influence of two-point statistics on the Hashin–Shtrikman bounds for three phase composites, 2017, *Journal of Computational and Applied Mathematics*, 318, 354-365. **Q1**.

C.1.7. C. Calvo-Jurado, J. Casado-Díaz, M. Luna-Layne, 2016, Homogenization of nonlinear Dirichlet problems in random perforated domains, *Nonlinear Analysis, Theory, Methods and Applications*, 133, 250-274. **Q1**.

C.1.8. Parnell, W.J., Calvo-Jurado, C., 2015, On the computation of the Hashin–Shtrikman bounds for transversely isotropic two-phase linear elastic fibre-reinforced composites, *Journal of Engineering Mathematics*, 95, 295-323. **Q3**.

C.1.9. Calvo-Jurado, C., Parnell, W.J., 2014. Hashin–Shtrikman bounds on the effective thermal conductivity of a transversely isotropic two-phase composite material, *Journal of Mathematical Chemistry*, 53, Issue 3, 828-843. **Q2**.

C.1.10. C. Calvo-Jurado, J. Casado-Díaz, M. Luna-Layne, 2015, Homogenization of the Poisson equation with Dirichlet conditions in random perforated domains, *Journal of Computational and Applied Mathematics*, 10.1016/j.cam.2014.07.006

C.1.11. C. Calvo-Jurado, J. Casado-Díaz, M. Luna-Layne, 2013, The homogenization of the heat equation with mixed conditions on randomly subsets of the boundary, *Discrete and Continuous Dynamical Systems*, 85-94.

C.1.12. C. Calvo-Jurado, J. Casado-Díaz, M. Luna-Layne, 2009, Asymptotic behavior of nonlinear systems in varying domains with boundary conditions on varying sets, *Control Optimisation and Calculus of Variations*, 15, 49-67, doi: 10.1051/cocv:2008021

C.1.13. C. Calvo-Jurado, 2008, Homogenization of nonlinear parabolic problems with varying boundary conditions on varying sets, *International Journal of Computer Mathematics*, 85, 315-396.

C.1.14. C. Calvo-Jurado, J. Casado-Díaz, 2007, Nonlocal limits in the homogenization of linear elliptic problems arising in periodic homogenization, *Journal of Computational and Applied Mathematics*, 204, 3-9.

C.1.15. C. Calvo-Jurado, J. Casado-Díaz, M. Luna-Layne, 2007, Parabolic problems with varying operators and Dirichlet and Neumann boundary conditions on varying sets, *Discrete and Continuous Dynamical Systems*, 181- 190.

C.1.16. C. Calvo-Jurado, J. Casado-Díaz, M. Luna-Layne, 2007, Homogenization of elliptic problems with the Dirichlet and Neumann conditions imposed on varying subsets, *Mathematical Methods in the Applied Sciences*, 30 (14), 1611-1625.

C.2. Proyectos

Título del proyecto: Optimización de Algoritmos y Aplicaciones Paralelas en Sistemas Heterogéneos Mediante el Uso Combinado de Modelos Formales de Cómputo y Comunicaciones

Entidad financiadora: Junta de Extremadura

Entidades participantes: Universidad de Extremadura

Duración, desde: 01-06-2020 hasta: 31-12-2022

Cuantía: 85800 €

Investigador responsable: Juan Antonio Rico Gallego

Nº investigadores: 5

Título del proyecto: Homogeneización de EDP con aplicaciones en Física, Ingeniería y Biomedicina

Entidad financiadora: Ministerio de Ciencia e Innovación (PID2020-116809GB-I00)

Entidades participantes: Universidad Alfonso X el Sabio. Universidad de Extremadura.

Duración, desde: 01-09-21 hasta: 31-08-24.

Cuantía: 30492.00€.

Investigador responsable: Juan Casado Díaz/Manuel Luna Laynez.

Nº investigadores: 8

Título del proyecto: Homogeneización de EDP. Aplicación al Modelado y Diseño Óptimo.

Entidad financiadora: Plan Estatal 2013-2016 Excelencia - Proyectos I+D

Entidades participantes: Universidad de Sevilla

Duración, desde: 1-01-15 hasta: 31-12-17

Investigador responsable: Juan Casado Díaz/Manuel Luna Laynez

Nº

investigadores: 7

Título del proyecto: Análisis Asintótico y control de la mecánica de medios continuos. Estudio teórico y numérico.

Entidad financiadora: Ministerio de Ciencia e Innovación. Plan Nacional del 2011.

Entidades participantes: Universidad de Sevilla

Duración, desde: 1-01-12

hasta: 31-12-14 **Cuantía:** 96.800€

Investigador responsable: Juan Casado Díaz

Nº investigadores: 9

Título del contrato: “Modelización de problemas de la Ingeniería Civil. Evaluación de riesgos y análisis de soluciones técnicas”

Empresa/Administración financiadora: Asfaltos y Aglomerados Santano, S.A. / Servicio Extremeño Público de Empleo. SEXPE. Plan Regional. Proyectos y Ayudas

Duración, desde: 20-11-18

hasta: 19-05-20 **Cuantía:** 40.677.14€

Investigador responsable: Carmen Calvo Jurado,

Nº investigadores: 2