MINISTERIO DE CIENCIA E INNOVACIÓN

Cofinanciado por la Unión Europea

AGENCIA ESTATAL DE INVESTIGACIÓN

CURRICULUM VITAE (CVA)

IMPORTANT – The Curriculum Vitae cannot exceed 4 pages. Instructions to fill this document are available in the website.

Part A. PERSONAL INFORMATION

CV date	29/11/2022

First name	José		
Family name	Carmona Tapia		
Gender (*)	Male	Birth date (dd/mm/yyyy)	29/09/1971
Social Security, Passport, ID number	34850713D		
e-mail	jcarmona@ual.es	URL Web	https://w3.ual.es/personal/jcarmona/
Open Researcher and Contributor ID (ORCID) (*)		0000-0001-9319-4382	

(*) Mandatory

A.1. Current position

Position	Professor (PTU)			
Initial date	22/06/2004			
Institution	University of Almería			
Department/Center	Mathematics	Facultad de Ciencias Experimentales		
Country	Spain		Teleph. number	(0034) 607401568
Key words	Nonlinear functional analysis; Elliptic Partial Differential Equations; Qualitative properties; Generalized solutions			

A.2. Previous positions (research activity interuptions, art. 14.2.b))

Period	Position/Institution/Country/Interruption cause
1995-1997	Associate Professor/University of Almería/Spain
1997-1997	FPU-Junta de Andalucía /University of Almería/Spain
1997-1999	Assistant Lecturer/University of Almería/Spain
1999-2004	Associate Professor/University of Almería/Spain

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
PHD in Mathematics	University of Almería	2001
Degree in Mathematics	University of Granada	1994

Part B. CV SUMMARY *(max. 5000 characters, including spaces)*

My scientific career is developed in the field “Nonlinear Functional Analysis and Elliptic Partial Differential Equations” as a member of a consolidated group in the training of researchers for more than 25 years.

Among others, I have 26 JCR publications, a non-JCR one and 2 book chapters. In all cases these are original results with relevant achievements. In the last 10 years at least 10 of them are at the same time in the JCR-first third in impact factor, 5-year impact factor and article influence score and another 7 at least in the JCR-first third of one of them. I have contributed

significantly to the generation of knowledge as can be seen from the more than 210 citations by more than 200 different authors.

My contribution to the generation of ideas, hypotheses and results can be summarized as follows. In the study of quasilinear elliptic problems, I have contributed to show how to study problems without variational structure using bifurcation theory providing a detailed description of the solution set as an abstract theorem of "continua of solutions" relating Ambrosetti-Rabinowitz type results from Ambrosetti-Prodi ones. I have also contributed to provide relevant information on the number of solutions and their location using variational methods as a three critical points abstract theorem for a functional with derivatives only along certain directions extending the Pucci-Serrin result for regular functionals. I have been involved in the origin and development of the research in problems with lower order terms and singularities, which has been further developed by several international teams, giving rise to many PHD-theses in different universities. Finally, I have joined the study of certain non-local problems involving the fractional Laplacian operator with relevant contributions on regularity, existence, and multiplicity of solutions of problems with mixed boundary conditions.

Other relevant indicators of the research carried out: 3 research sex-year periods (sexenios), date of the last one 12/31/2019. Total number of citations: 228 in 181 papers, 196 excluding self-citations and 165 excluding self-citations of all authors. Average 8.4 citations/article. Citations in the last 5 years: 113, average 22,6 citations/year. H-index: 7. Number of publications in the first quartile (Q1): 16. Number of publications in the first decile (D1): 7

The communication of the results has been carried out through participation as a guest speaker or participant at national and international conferences and seminars, as well as in international doctoral courses. Specifically, I have participated as a guest speaker in congresses listed in Part C section C.2 as well as in Joint SIMA / SEMA conference on applied and industrial mathematics, Cagliari (Italy) 2010, Third days of partial differential equations, Valencia 2008, First and second workshop on recent advances in the analysis and control of Nonlinear differential equations, Córdoba 2004, and Sevilla 2005. I have participated as speaker in other meetings held in Prague, Granada, Salamanca, Madrid, Valencia, Almería, Castellón, Cádiz, Cartagena, Mojácar. I have given seminars at universities such as Granada, Seville, Bari, Rome, Monastir, Kairouan and Rabat. I have also organized several conferences in Almería, 2005, 2007, 2008, 2009, 2011 and a special session in CEDYA 2011 and 2022. I have taught the master course entitled Topological methods in the study of nonlinear elliptic PDE's, University of Monastir (Tunisia), 2009 (30 hours). I have taught (3 hours) as part of the Doc-Course Partial Differential Equations: Analysis, Numerics, and Control, 2018 Granada.

Funding for the development of the research work has been derived from my uninterrupted participation in 15 competitive research projects, in 5 of them as one of the principal investigators. This has also allowed me to collaborate with different national and international teams beyond my 14 national and 8 international co-authors. I have also received acknowledgements in some of the more than 50 papers reviewed anonymously.
Co-supervisor (in collaboration with David Arcoya Álvarez) of two PHD theses, Pedro J. Martínez-Aparicio (2010), currently Professor (PTU) at the Universidad de Almería (UAL) and Alexis Molino Salas (2018), Assistant Professor (PAD) at UAL. I have also supervised the PHD thesis of Salvador López Martínez (2020), currently PAD at the Universidad Autónoma de Madrid. I am co-supervisor of the nº1-FPU2022 Antonio J. Martínez Aparicio.
I participate in the coordinating team and European teachers of the Erasmus+ CBHE project “Strengthening Mathematics Education by the use of ICTs in Morocco" (942855€).

Part C. RELEVANT MERITS *(sorted by typology)*

C.1. Publications *(10 Selected from the last 10 years)*

1 Scientific paper. David Arcoya, José Carmona and Pedro J. Martínez-Aparicio. 2022. Multiplicity of solutions for an elliptic Kirchhoff equation. Milan Journal of Mathematics.

2 Scientific paper. José Carmona, Eduardo Colorado, Tommaso Leonori and Alejandro Ortega. 2021. Regularity of solutions to a fractional elliptic problem with mixed Dirichlet–Neumann boundary data. Advances in Calculus of Variations, De Gruyter, 14, pp. 521–539.
3 Scientific paper. José Carmona, Eduardo Colorado, Tommaso Leonori and Alejandro Ortega. 2020. Semilinear fractional elliptic problems with mixed Dirichlet-Neumann boundary conditions. Fractional Calculus and Applied Analysis, De Gruyter, 23 pp.1208-1239.
4 Scientific paper. José Carmona, Tommaso Leonori, Salvador López-Martínez and Pedro J. Martínez-Aparicio. 2019. Quasilinear elliptic problems with singular and homogeneous lower order terms. Nonlinear Analysis. Elsevier. 179, pp.105-130.
5 Scientific paper. José Carmona, Alexis Molino and Julio D. Rossi. 2019. The Gelfand problem for the 1-homogeneous p-Laplacian. Advances in Nonlinear Analysis. De Gruyter. 8, pp 545-558.
6 Scientific paper. David Arcoya Álvarez, José Carmona Tapia and Pedro J. Martínez-Aparicio. 2017. Comparison principle for elliptic equations in divergence with singular lower order terms having natural growth. Communications in Contemporary Mathematics. World Scientific. 19-2, 1650013, pp.1-11.
7 Scientific paper. José Carmona and Pedro J. Martínez-Aparicio. 2017. Homogenization of singular quasilinear elliptic problems with natural growth in a domain with many small holes. Discrete Contin. Dyn. Syst. 37-1, pp.15-31.
8 Scientific paper. José Carmona Tapia, Alexis Molino Salas and Lourdes Moreno Mérida. 2016. Existence of a continuum of solutions for a quasilinear elliptic singular problem. Journal of Mathematical Analysis and Applications. Elsevier. 436-2, pp.1048-1062.
9 Scientific paper. David Arcoya, José Carmona and Pedro J. Martínez-Aparicio. 2014. Gelfand type quasilinear elliptic problems with quadratic gradient terms. Ann. Inst. H. Poincaré Anal. Non Linéaire. Elsevier. 31-2, 249--265.
10 Scientific paper. José Carmona, Silvia Cingolani, Pedro J. Martínez-Aparicio and Giuseppina Vannella. 2013. Regularity and Morse index of the solutions to critical quasilinear elliptic systems. Comm. Partial Differential Equations. Taylor & Francis. 38-10, 1675--1711.

C.2. Congress *(10 Selected from the last 10 years)*

1. Invited lecture: Multiple positive solutions for an elliptic Kirchhoff equation**.** José Carmona. XXVIICEDYA/XXVIICMA 2022, 18/07/2022, Zaragoza-Spain.
2. Invited lecture: Bifurcation for non-coercive Dirichlet problems with subquadratic gradient terms**.** José Carmona. Nonlinear Partial Differential Equations 2022, 22/06/2022, Valencia-Spain.
3. Invited lecture: Fractional elliptic problems with mixed Dirichlet-Neumann boundary data**.** José Carmona. Minisymposium Local and Non-Local Partial Differential Equations – XXVICEDYA/XVICMA, 14/06/2021, Gijón-Spain.
4. Invited lecture and Scientific Committee: Fractional elliptic problems with mixed boundary data**.** José Carmona. II IMDE: Conference Amazon-Andalusia on PDEs, 10-13/06/2019, Belem-Brazil.
5. Invited lecture: The Gelfand problem for the 1-homogeneous p-laplacian. José Carmona, The 3rd Study Day on Algebra and its Applications, 13/04/2019, Al Hoceima, Marruecos
6. Invited lecture: Quasilinear elliptic problems with a singular gradient term**.** José Carmona. Workshop on Partial Differential Equations: Analysis, Numerics and Control, 24/04/2018, Granada-Spain.
7. Invited lecture: Principal eigenvalue for a quasilinear elliptic singular problem and applications**.** José Carmona. Workshop on Nonlinear Analysis and Differential Equations, A celebration of the 60th birthday of Antonio Cañada, 29/09/2017, Granada-Spain.

8. Invited lecture: Nonlinear elliptic singular systems with quadratic gradient lower order terms**.** José Carmona. Special session 4: Partial Differential Equations, Second Joint Conference of the Belgian, Royal Spanish and Luxembourg Mathematical Societies, 06/06/2016, La Rioja-Spain.
9. Invited lecture: Quasilinear elliptic problems with natural growth in the gradient and variable exponent singularities**.** José Carmona. Special session: Elliptic Partial Differential Equations, First Joint Meeting Brazil-Spain in Mathematics, 10/12/2015, Fortaleza-Brazil.
10. Invited lecture: On some results for quasilinear elliptic problems with quadratic gradient lower order terms. José Carmona. Workshop on nonlinear equations, Univ. Carlos III de Madrid, 18/10/2013, Leganés-Spain.

C.3. Research projects *(6 Selected from the last 10 years)*

1.- PID2021-122122NB-I00, Nonlinear Analysis and PDE`s from Physics and Geometry. **Funding agency**: Ministerio de Ciencia, Innovación y Universidades (MCIU), a la Agencia Estatal de Investigación (AEI) y al Fondo Europeo de Desarrollo Regional (FEDER), 2021. **Principal Investigator**: José Carmona Tapia, **University of Almería**, and David Ruiz Aguilar (University of Granada). **Date and Amount**: from September 2022 to August 2025, 90750 euros. **Type of participation**: Principal investigator.
2.- PGC2018-096422-B-I00, Nonlinear Elliptic Partial Differential Equations arising in Physics and Geometry. **Funding agency**: Ministerio de Ciencia, Innovación y Universidades (MCIU), a la Agencia Estatal de Investigación (AEI) y al Fondo Europeo de Desarrollo Regional (FEDER), 2018. **Principal Investigator**: David Arcoya Álvarez, **University of Granada**, and José Carmona Tapia (University of Almería). **Date and Amount**: from January 2019 to December 2021, 79134 euros + FPI. **Type of participation**: Principal investigator.
3.- P18-FR-667, Análisis no lineal y Ecuaciones en Derivadas Parciales elípticas con origen en Física y Matemáticas. **Funding agency**: Consejería de Transformación Económica, Industria, Conocimiento y Universidades de la Junta de Andalucía. PAIDI 2020, 2018. **Principal Investigator**: José Carmona Tapia, **University of Almería**, and Salvador Villegas Barranco, University of Granada. **Date and Amount**: 01/01/2020 – 31/12/2022, 94000 euros. **Type of participation:** Principal investigator
4.- A-FQM-187-UGR18, Ecuaciones en Derivadas Parciales no lineales. **Funding agency**: Programa Operativo FEDER de Andalucía 2014-2020, 2018. **Principal Investigator**: Salvador Villegas Barranco, **University of Granada,** and José Carmona Tapia, University of Almería. **Date and Amount**: 01/01/2020-31/12/2021, 13400 euros. **Type of participation:** Principal investigator
5.- MTM2015-68210-P, Análisis No Lineal y Ecuaciones en Derivadas Parciales Elípticas
Funding agency: Ministerio de Economía y Competitividad 2015. **Principal Investigator**: David Arcoya Álvarez and David Ruiz Aguilar, **University of Granada**. **Date and amount**: from January 2016 to December 2018, 60000 euros + FPI. **Type of participation**: Researcher (Equipo investigador).
6.- MTM2012-31799, Análisis no lineal y ecuaciones en derivadas parciales, **Funding agency**: Ministerio de Economía y Competitividad. D.G.I 2012. **Principal investigator**: David Arcoya Álvarez, **University of Granada**. **Date and amount:** 01/01/2013 - 31/12/2015, 42000 euros + FPI. **Type of participation** Researcher (Equipo investigador).

C.4. Contracts, technological or transfer merits

1. Erasmus+ CBHE project "Strengthening Mathematics Education by the use of ICTs in Morocco", **Principal Investigator**: Luis Oyonarte, **Universidad de Almería. Date and amount:** 15/01/2021-15/01/2024, 942855 euros, **Type of participation:** Coordinating team and European teachers.