

Part A. PERSONAL INFORMATION

CV date

30 de mayo de
2024

First and Family name	María Jesús Carro Rossell		
Researcher codes	ORCID (**)	0000-0003-3542-7971	
	SCOPUS Author ID (*)	7004418138	
	WoS Researcher ID (*)	D-4631-2014	

(*) *Optional*

(**) *Mandatory*

A.1. Current position

Name of University	Universidad Complutense de Madrid		
Department	Análisis Matemático y Matemática Aplicada		
Current position	Catedrática de Universidad	From	September 9, 1993
Key words	Harmonic Analysis; Functional Analysis; Function Spaces		

A.2. Education (title, institution, date)

Bachelor	Universidad de Extremadura	1984
PhD	Universidad de Barcelona	January-1988

A.3. General indicators of quality of scientific production (see instructions)

- Number of sexennial research evaluations: 6 (last one dated 31-12-2023)
- Advisor of 7 PhD Thesis
- Total citations: 992 (MathSciNet)
- h-index: 15 (MathSciNet)

Part B. CV SUMMARY (max. 3500 characters, including spaces)

I graduated in Mathematical Sciences from the University of Extremadura in 1984. That same year I obtained an assistant position at the University of Barcelona where I did my doctoral thesis under the supervision of Prof. Joan Cerdà obtaining the title of Doctor of Mathematical Sciences from this university in 1988. I did an 18-month postdoctoral stay at Washington University (St. Louis, USA), under the supervision of Prof. Guido Weiss. In 1991 I obtained the position of "Titular" at the Autonomous University of Barcelona and in 1992 I obtained the same position at the University of Barcelona. It was at this University where in 1993 I got the Full Professor and I worked there until August 2019. Since August 1 of that year, I am a Full Professor at the University Complutense of Madrid.

Since 1996 and until now I have done several sabbatical semesters visiting the Universities of Lulea (Sweden), Washington University (St. Louis, USA), University of Kansas (Lawrence, USA) and University of Missouri (Columbia, USA).

My lines of research are framed in the field of Mathematical Analysis and, in particular, in topics related to functional properties of invariant rearrangement spaces, interpolation theorems of Banach spaces and extrapolation theory as well as boundedness of classical operators, such as the Hardy-Littlewood maximal function, Calderón-Zygmund singular integrals, multipliers or the Hardy transform.

In summary, I will cite just three of the main achievements in this context:

- Unification of the estimates with weights of the classes A_p (in Lebesgue spaces) and B_p (in Lorentz spaces) for the maximal operator, which is part of the doctoral thesis of José A.



Raposo, co-supervised with Javier Soria and published in the Memoirs of the American Mathematical Society.

– Improve several results of Yano's extrapolation theory, obtaining a larger limiting space than previously known. These results have been published in the Journal of Functional Analysis (2000, 2012), Journal of London Mathematical Society (2004) and Revista Matemática Iberoamericana (2004), among others.

– In collaboration with professors L. Grafakos and J. Soria, we have managed to improve Rubio de Francia extrapolation theory, obtaining a method that allows us to prove the boundedness of operators at the endpoint $(1,1)$. The results obtained have been published in the Journal of Functional Analysis and in Advances in Mathematics.

I have supervised 7 Doctoral Theses and I am co-supervising, together with Prof. Teresa Luque, the thesis of Laura Sánchez-Pascuala.

I have collaborated with more than 45 researchers from recognized international institutions in countries such as Argentina, USA, Italy, United Kingdom, Czech Republic, Russia, or Sweden, with whom I maintain a close collaboration, also materialized in various research stays.

Finally, I received the distinction of the *Generalitat* for the Promotion of University Research in 2003, the RSME medal in 2020 and I became member of the Real Academia de Ciencias Físicas y Naturales in 2021.

Part C. RELEVANT MERITS (sorted by typology)

C.1. Publications (best 10 publications since 2010)

1. *On weak-type $(1,1)$ for averaging type operators.* Sergi Baena-Miret, María J. Carro J. *Funct. Anal* 284 (2023), no.10 Paper No. 109902, 24 pp.
2. *The Neumann problem in graph Lipschitz domain in the plane,* María J. Carro, Virginia Naibo, Carmen Ortiz-Caraballo. *Mathematische Annalen* 385 (2023), no.1-2, 17-57
3. *Endpoint estimates for Rubio de Francia operators.* María J. Carro, Carlos Domingo-Salazar, *Trans. Amer. Math. Soc.* 371 (2019), no. 3, 1621–1648.
4. *The return times property for the tail on logarithm-type spaces.* María J. Carro, Carlos Domingo-Salazar, *Discrete Contin. Dyn. Syst.* 38 (2018), no. 4, 2065–2078.
5. *On the Dirichlet problem on Lorentz and Orlicz spaces with applications to Schwarz-Christoffel domains.* María J. Carro, Carmen Ortiz-Caraballo, *J. Differential Equations* 265 (2018), no. 5, 2013–2033.
6. *A counting problem in ergodic theory and extrapolation for one-sided weights.* María J.; Carro, María Lorente, Francisco J. J. Martín-Reyes, *Anal. Math.* 134 (2018), no. 1, 237–254
7. *Restricted weak-type Rubio de Francia extrapolation for $p > p_0$ with applications to exponential integrability estimates,* María J. Carro, Javier Soria, *Adv. Math.* **290** (2016), 888-918.
8. *Weighted weak-type $(1,1)$ estimates via Rubio de Francia extrapolation,* María J. Carro, Loukas Grafakos, Javier Soria, *J. Funct. Anal.* **269** (2015), 1203-1233.
9. *Extrapolation on $L_{p,\infty}(\mu)$.* María J. Carro, Pedro Tradacete, *J. Funct. Anal.* 265 (2013), no. 9, 1840–1869



10. *On restriction of maximal multipliers in weighted settings*, María J. Carro, Salvador Rodríguez-López, *Trans. Amer. Math. Soc.* 364 (2012), 2241-2260.

C.2. Research projects (since 2010)

1. *PID2020-113048GB-I00 Espacios de Funciones y Técnicas de Acotación de Operadores en Análisis*. Gobierno de España. IP: María Jesús Carro Rossell; desde: 01-09-2021; hasta: 31-08-2025; **participation: IP.**
2. *MTM2016-75196-P: Espacios de Funciones y Técnicas de Acotación de Operadores en Análisis*; Ministerio de Economía y Competitividad; IP: María Jesús Carro Rossell; starts: 01-01-2017; ends: 31-12-2020; grant: 97.042 €; **participation: co-IP.**
3. *2017SGR358: Grup de Teoria de Funcions*; Agència de Gestió d'Ajuts Universitaris i de Recerca; IP: Maria Carmen Cascante Canut; starts: 01-01-2017; ends: 31-12-2019; grant: 20.000,00 €; participation: Researcher.
4. *MDM-2014-0445: Barcelona Graduate School of Mathematics (BGSMath)*; Ministerio de Economía y Competitividad; IP: Marc Noy; starts: 01-07-2015; ends: 30-06-2019; grant: 1.700.000,00 €; participation: Researcher.
5. *MTM2013-40985-P: Espacios de Funciones y Técnicas de Acotación de Operadores en Análisis*; Ministerio de Economía y Competitividad; IP: María Jesús Carro Rossell; starts: 01-01-2014; ends: 31-12-2016; grant: 39.752,00 €; **participation: co-IP.**
6. *2014SGR289: Grup de Teoria de Funcions*; Agència de Gestió d'Ajuts Universitaris i de Recerca; IP: Maria Carmen Cascante Canut; starts: 01-01-2014; ends: 31-12-2016; grant: 30.000,00 €; participation: Researcher.
7. *PRX12/00002: Operadores Multilineales en Análisis Armónico*; Ministerio de Educación (programa *Salvador de Madariaga*: sabbatical research stay at University of Kansas, USA); starts: 01-01-2013; ends: 31-05-2013; grant: 18.000,00 €; **participation: IP.**
8. *MTM2010-14946: Espacios de Funciones y Técnicas de Acotación de Operadores en Análisis*; Ministerio de Ciencia e Innovación; starts: 01-01-2011; ends: 31-12-2013; grant: 95.000,00 €; **participation: IP.**

C.5. Other merits (since 2010)

1. Committees:
 - 2009-2012: President of the jury of the José Luis Rubio award from France.
 - 2010-2011: President of the Committee for the Celebration of the Centennial of the RSME.
 - 2011-2019: President of the Advisory Committee of the Institute of Mathematics of the University of Seville.
 - 2012-2013: Member of the Mathematics panel at the Swedish Research Council.
 - 2013-2015: Member of the Chair Accreditation Commission in the area of Sciences.
 - 2013-2016: Coordinator of the Mathematics and Engineering area of Ikerbasque.
 - 2015-2016: President of the Commission for Accreditation to Chair in the area of Sciences of ANECA.



- 2016-2018: President of the A1 Mathematics Commission of ANECA
- 2015-2019: President of the Scientific Commission of the RSME.
- 2018-2021: AEI Mathematics Collaborator
- Since 2020: Vice President of the CEMat.

2. Editorial Committees:

- Since 2012: Editor of *Journal of Mathematical Analysis and Applications*.
- Since 2007: Editor of *Extracta Mathematicae*.
- Since 2010: Editor of *Eurasian Mathematical Journal*.
- Since 2014: Editor of *Commentationes*
- Since 2017: Editor of *Boletín de la Sociedad Matemática Mexicana*.

3. Plenary Speaker at the following congresses:

- FSA2020-International Conference on “Function Spaces and Applications”, Germany, 2022
- Prairie Analysis workshop, Manhattan, KS (USA), virtual meeting (2021).
- Conference in honor of Prof. Lubos Pick. Czech Republic. (2021).
- II BMS-RSME-SML Joint Meeting, Logroño (2016).
- PDE, Potential theory and Function spaces, Linköping, Sweden, 2015.
- Third joint meeting of the Royal Spanish Mathematical Society and the Mexican Mathematical Society, Zacatecas, Mexico, 2014.
- Function Spaces, Interpolation Theory, Fourier Analysis, PDE, Inequalities, Homogenization Theory and applications, Narvik, Norway, 2014.
- First joint conference of the Belgian, Royal Spanish and Luxembourg mathematical Society, Lieje, Belgium, 2012.
- International Functional Analysis Meeting on the Occasion of the 80th Birthday of Professor Manuel Valdivia, Valencia, 2010.

Invited Speaker:

- ACOTCA 2023
- Conference GEOFI 2023

For more information visit the website: <https://www.ucm.es/mjcarro> and the research group (GARF): <https://www.ucm.es/garf>