

Part A. Personal Information

DATE 14 March 2017

Surname(s)	Rodríguez-Murillo	
Forename	Juan Carlos	
Social Security, Passport, ID number	01097179x	
Sex	Male	
Age	59	
Researcher numbers	Researcher ID	E-1290-2017
	Open Researcher and Contributor ID (ORCID)	0000-0002-3041-4621

A.1. Current position

Post/ Professional Category	Staff Scientist (Científico titular)	
UNESCO Code	2599 (Climate change and carbón cycle, 2508.99 (Limnology: Hydrochemical time series)	
Key Words	Carbon cycle, limnology, time series	
Name of the University/Institution	Consejo Superior de Investigaciones Científicas	
	Department/Center	Biogeoquímica y Ecología Microbiana, Museo Nacional de Ciencias Naturales
	Full Address	C/ Serrano 115 dpdo. 28006 Madrid, Spain
	Email Address	jcmurillo@mncn.csic.es
	Phone Number	+34 91 7822088
Start date		

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

1974-1979	Universidad Computense de Madrid	Licenciado en Ciencias Químicas	
		Masters (if appropriate)	
1982-1986	Universidad Computense de Madrid	Chemistry PhD (Doctor en Ciencias Químicas)	

A.3. Indicators of Quality in Scientific Production (*See the instructions*)

Total citations: 498
 Total citations since 2012: 240
 Total number of publications: 38
 h index: 9
 i 10: 8
 Source: Scholar Google
 (<https://scholar.google.es/citations?user=OZ76dfwAAAAJ&hl=es&cstart=20&pagesize=20>)

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Part B. Free Summary of CV (*Max. of 3.500 characters, including spaces*)

I was born in Madrid in September 1957. In 1986 I obtained my PhD in Chemistry from the Complutense University of Madrid (1986) with the thesis "Studies on the distribution and energy transfer in unimolecular reactions". In March 1990 I became permanent staff scientist of the Spanish National Research Council (CSIC). In my career two different parts can be distinguished:

The first from March 1982 until October 1992, where I worked on my PhD (between 1982 and 1986). I then worked as a postdoctoral fellow and non-staff researcher in the workforce in Germany, England and Spain (between 1987 and 1992), in the fields of unimolecular reactions and energy transfer, molecular dynamics and kinetic studies of reactions with lasers. Since 1989 I became interested in the problem of climate change, initially independently of my professional work in the Spanish National Research Council. The second stage is from 1992 to the present. At this stage I have focused on the study of the carbon cycle as a fundamental element of global change and, more specifically, in the study of the carbon cycle in soils and vegetation of peninsular Spain, developing methods for calculating carbon deposits and temporal variations in soil and vegetation. I was the first to calculate the carbon balance of forests in Spain and I made the first map of soil C of peninsular Spain. In parallel I have been interested in the study of the energy system (production and consumption), in order to achieve sustainable production and consumption of energy.

I have more recently been involved in the study of biogeochemical cycles in wetlands, developing a new interpretation of the NMR spectra of ¹³C sediments of wetlands to study the origins and transformations of organic matter, as well as in the study of the carbon cycle in freshwaters.

In the last seven years (2010 to present) I am working to determine temporal trends of organic carbon in large river and lake basins, which could be affected by global change, focusing my work in rivers and lakes of Switzerland. The results contradict the current paradigm of "a widespread increase of organic C in rivers and lakes in the northern hemisphere."

Another recent lines of research are the study of the dynamics of organic matter and carbon fluxes in temporary salt lakes, widespread and understudied ecosystems from these points of view, and the analysis of temporal series of trace elements in waters.

My present work is the determination of temporal trends of inorganic carbon and other product of weathering in rivers and the study of the influence of climate change on the time series of those products applying methods of nonstationary time series, as wavelet transform and wavelet coherence.

Part C. Accomplishments (*Order by typology*)

I was the first to calculate the carbon balance of forests in Spain and I made the first map of soil C of peninsular Spain.

In the last five years, I am working to determine temporal trends of organic carbon in large river and lake basins, which could be affected by global change, focusing my work in rivers and lakes of Switzerland. The results contradict the current paradigm of "a widespread

increase of organic C in rivers and lakes in the northern hemisphere", the so-called "global browning".

Another recent lines of research are the study of the dynamics of organic matter and carbon fluxes in temporary salt lakes, widespread and understudied ecosystems from these points of view, and the analysis of temporal series of trace elements in waters. I have determined the (increasing) trends of several trace elements in Lake Geneva waters (Switzerland), including some "technologically critical elements".

I am also applying advanced techniques of time series analysis (wavelets) to time series of solutes in Swiss rivers.

C.1. Publications

1) J.C. Rodríguez Murillo (1994). The carbon budget of the Spanish forests. *Biogeochemistry*, 25: 197-217.

2) J.C. Rodríguez Murillo (1997). Temporal variation in the carbon budget of forest ecosystems in Spain. *Ecological Applications*, 7: 461-469.

3) C. Hontoria, A. Saa y J.C. Rodríguez Murillo (1999). Relationships among soil organic carbon, climate, land use, and other site characteristics in Peninsular Spain. *Soil Science Society of America Journal*, 63: 614-621.

4) J.C. Rodríguez Murillo (2001). Organic carbon content under different types of land use and soil in Peninsular Spain. *Biology and Fertility of Soils*, 33: 53-61.

5) Juan Carlos Rodríguez-Murillo, Miguel Álvarez-Cobelas, and Elisa Piña-Ochoa (2011). Recent changes in nutrient content and accumulation in the sediments of Colgada Lake (Spain): Mineralization vs pollution effects. *Fundamental and Applied Limnology*, 178:177-189.

6) Juan Carlos Rodríguez-Murillo, Gonzalo Almendros, and Heike Knicker (2011). Wetland soil organic matter composition in a Mediterranean semiarid wetland (Las Tablas de Daimiel, Central Spain): An insight into different carbon sequestration pathways. *Organic Geochemistry* 42:762-773.

7) Montserrat Filella and Juan Carlos Rodríguez-Murillo (2014). Long-term trends of organic carbon concentrations in freshwaters: Strengths and weaknesses of existing evidence. *Water* 6: 1360-1418.

8) J.C. Rodríguez-Murillo, M. Filella (2015). Temporal trends in organic carbon content in the main Swiss rivers, 1974-2010. *Science of the Total Environment* 502:206-217.

9) J.C. Rodríguez-Murillo, M. Filella (2015). Temporal evolution of organic carbon concentrations in Swiss lakes: Trends of allochthonous and autochthonous organic carbon. *Science of the Total Environment* 520:13-22.

10) J.C. Rodríguez-Murillo, Gonzalo Almendros and Heike Knicker (2017). Humic acid composition and humification processes in wetland soils of a Mediterranean semiarid wetland. *Journal of Soils and Sediments*, DOI: 10.1007/s11368-017-1663-y

11) M. Filella, J.C. Rodríguez-Murillo (2017). Less-studied TCE: are their environmental concentrations increasing due to their use in new technologies? *Chemosphere* 182:605-616.

- 12) J.C. Rodríguez-Murillo, P. Nirel and M. Filella (2018). Detecting trends in freshwater trace element concentrations: methodological issues and data treatment. H₂ Open Journal, DOI: 10.2166/h2oj.2018.006.

C.2. Research Projects and Grants

I have participated as a researcher in the projects:

- 1) Bases científicas para la restauración de ecosistemas degradados en el contexto de los bienes y servicios ambientales que proporcionan los suelos y la vegetación de Castilla-La Mancha. Entidad financiadora: Junta de Comunidades de Castilla-La Mancha-FEDER. 2011-2013. IP: Gonzalo Almendros Martín. Iniciado en 2014, hasta 2017.

2) Evaluación de impactos ambientales mediante la caracterización molecular de las formas resilientes de materia orgánica en los suelos (CGL2008-04296). Entidad financiadora: Plan Nacional I+D+i. 2009-2014. IP: Gonzalo Almendros Martín.

C.3. Contracts

C.4. Patents and other IPR

C.5, C.6, C.7... Other

C.2 Lectures and conferences on climate change for the general public (1990-2005). Popular science articles and chapters in collective books.

C.2 Lecturer in master “Cambio Global” of UIMP (2008-2011 and 2013-2014).

C.3 Director of Graduate works (“Trabajos de fin de carrera”):

2013: “Relación entre el carbono orgánico en las aguas de los principales ríos suizos y las precipitaciones (1975-2011)”, Laura Morales Salmerón, Universidad Rey Juan Carlos.

2014: Esperanza Camargo Valencia. Prácticas en “empresas” y trabajo de fin de grado: “Emisión de CO₂ en lagunas salinas manchegas”, Universidad de Alcalá de Henares.

C.4 Reviewer for:

Journal of Arid Lands

Water

Science of the Total Environment

Instructions

Important Announcement

Following the Call for Proposals, **ONLY CVS PRESENTED IN THIS FORMAT WILL BE TAKEN INTO CONSIDERATION. CVs presented in other formats WILL BE DISMISSED with no possibilities for modifications.**

GENERAL CONSIDERATIONS

Following the call it is mandatory to use the following format when filling the document: Font 11 on Times New Roman/ Arial, single interlineal space, lateral margins of 2.5cm and top and bottom margins of 1.5cm.

Max. extension of the whole document (Part A, B and C) cannot exceed four pages.

PART A. PERSONAL INFORMATION

Researcher ID is a unique identifier that consists of alphanumeric characters that enable researchers to manage their publication lists, track their times cited counts and h-index, identify potential collaborators and avoid author misidentification. It is hosted by Web of Science.

Access: Web of Science > My Settings > Researcher ID

Open Researcher and Contributor ID (ORCID) provides a persistent digital identifier that distinguishes the researcher from every other person and, through integration in key research workflows such as manuscript and grant submission, supports automated linkages between you and your professional activities ensuring that your work is recognized.

Access: www.orcid.org

A.3. Indicators of Quality in Scientific Production

Please add information on a) total number of citations, average number of citations during the last five years, b) total number of publications in the first quartile (Q1) and first decile (D1), e) h index, and f) any other indicators that you may consider relevant.

To calculate these values, use default data collected in the Web of Science of Thomson Reuters and/or Scopus. When this is not possible, other indicators may be used, specifying the reference database.

PART B. FREE SUMMARY OF CV (Max. of 3.500 characters, including spaces)

Describe briefly your scientific career, the main scientific-technical achievements, and the mid-to-long term scientific-technical interests and objectives of your research agenda. Indicate any other aspects that you may consider important to understand your career path.

PART C. ACCOMPLISHMENTS (Order by typology)

Given the limitations in number of characters, please mention the most relevant achievements sorted by the typology that best suits your scientific profile. Please be clear and avoid ambiguities.

Use reverse chronological order within each section. Limit your merits over the past 5 years, except for those which have an extraordinary importance for your CV.

C.1. Publications

Include a full review of relevant 5 to 10 publications.

In case of an article, please include authors in order of signature, year of publication, title of the article, name of the journal, volume, start page to end page.

If it's a book or chapter of a book, include its publisher and ISBN also.

If there are many authors, please indicate the total number of signatories and the position of the researcher (total number/ position of researcher) as for example 95/18.

C.2. Participation in Research, Development and Innovation Projects

Indicate the most important projects in which you have participated (maximum 5 to 7 projects), including a) its reference, b) title, c) funding body and call for proposals, d) name of the principal investigator and his/her institution affiliation, e) date of start and end of the project, f) amount of subsidy, and g) your type of participation, e.g.: researcher, principal investigator, European project coordinator, etc..

C.3. Participation in Research, Development and Innovation Contracts

Indicate the most important contracts in which you have participated (maximum 5 to 7 contracts), including a) title, b) company or entity, c) name of principal investigator and his/her institution affiliation, d) date of start and end of the contract, and e) amount of funding.

C.4. Patents

Indicate the most important patents and other intellectual property in which you have collaborated. Give a) the order of signing authors, b) reference, c) title, d) priority countries, e) date, f) holder entity and companies that are exploiting the patents.

C.5, C.6, C.7... Other

By sequential numbering (C.5, C.6, C.7 ...) please include any other achievements that you deem necessary, such as for example: directions of works, participation in assessment or advisory tasks, membership of international committees, management of scientific activity, editorial boards, scientific awards, etc.

FINAL CONSIDERATIONS

Please remember that all the submitted achievements must be presented concisely, including dates or periods for each performance.

The short CV aims to facilitate, organize and streamline the evaluation process. The use of the individual identification number of the researcher facilitates access to the published scientific papers and information on the impact of each of them.

If you believe this short CV does not contain a representative part of your career, you may voluntarily include an extensive version in the proposal documentation, which will also be provided to the reviewers of your application.