



MINISTERIO
DE ECONOMÍA
Y COMPETITIVIDAD

AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2013

SECRETARÍA DE ESTADO
DE INVESTIGACIÓN
DESARROLLO E INNOVACIÓN

SECRETARÍA GENERAL
DE CIENCIA, TECNOLOGÍA
E INNOVACIÓN

DIRECCIÓN GENERAL
DE INVESTIGACIÓN
CIENTÍFICA Y TÉCNICA

SUBDIRECCIÓN GENERAL
DE RECURSOS HUMANOS
PARA LA INVESTIGACIÓN

Nombre: AÑEL CABANELAS, JUAN ANTONIO
Referencia: RYC-2013-14560
Área Científica: Ciencias de la Tierra
Correo Electrónico: juan.anel@smithschool.ox.ac.uk

Título:

Estudio de la Alta Troposfera-Baja Estratosfera e Impactos Climáticos

Resumen de la Memoria:

Mi línea de investigación se centra fundamentalmente en el estudio de la tropopausa y la alta troposfera-baja estratosfera. En este campo realicé durante mi tesis doctoral el primer estudio exhaustivo de climatología de tropopausas múltiples. Ésta línea ha dado lugar a multitud de trabajos posteriores y un intenso debate actualmente sobre las causas de estos fenómenos, sus implicaciones para el intercambio de masas de aire entre la troposfera y la estratosfera, así como su relación con el cambio climático.

Para todas mis investigaciones he combinado multitud de técnicas y metodologías en el estudio de dichos fenómenos: datos observacionales directos como radiosondeos, reanálisis, datos de satélite y modelos climáticos.

Varios de mis artículos en este campo son muy citados y mis contribuciones han sido reconocidas por ejemplo ejerciendo el cargo de codirector del programa de la Organización Meteorológica Mundial para el estudio de la misma.

Otra parte de mi línea de investigación está relacionada con el estudio de los impactos del clima y los eventos meteorológicos extremos. He publicado varios artículos sobre la meteorología de la península ibérica y en la actualidad soy el coordinador científico del proyecto ClimatePrediction.net en la University of Oxford. Una de mis más recientes contribuciones en este campo ha sido la coautoría del informe anual publicado por la American Meteorological Society sobre eventos meteorológicos extremos. Además he actuado como revisor del 5º Informe del IPCC y he participado en la cumbre de las partes de Naciones Unidas sobre cambio climático. Como ejemplo el último contrato de investigación que he obtenido, ha sido con Royal Bank of Scotland por un valor de 60000 euros para identificar los impactos del cambio climático sobre sus intereses e inversiones.

Por último desarrollo investigación en el campo de la recuperación de datos meteorológicos históricos como soporte a las dos líneas anteriormente mencionadas, campo en el cual también he publicado varios artículos.

Resumen del Currículum Vitae:

En la actualidad ostento el cargo de Research Fellow en Investigación Climática de la Smith School en la University of Oxford y de coordinador científico del proyecto ClimatePrediction.net, uno de sus proyectos más prestigiosos y que ha sido reseñado en portada varias veces por revistas como Nature y Science. La traducción de este puesto corresponde al de jefe de investigación en climatología de dicho centro.

Adicionalmente y durante 2013 he trabajado a tiempo parcial en el proyecto ExCirEs financiado por el Plan Nacional de I+D+i en la Universidad de Vigo.

A lo largo de mi trayectoria investigadora he sido investigador contratado en la Universidad Complutense de Madrid y la Universidad de Vigo, desarrollando varias estancias de investigación predoctorales. En mi etapa posdoctoral y antes de incorporarme a la University of Oxford en 2011, conseguí puestos posdoctorales en convocatorias públicas competitivas en Portugal y España. En dicho período realicé estancias de investigación en centros de Portugal, EE.UU., Cuba y Reino Unido. Actualmente sumo más de 40 meses de experiencia posdoctoral trabajando fuera de España.

He publicado 23 artículos de investigación en revistas indexadas, algunos altamente citados, varios capítulos de libros y editado dos libros. He publicado otros trece artículos en otras publicaciones. Desde 2013 soy además revisor de libros para Contemporary Physics. He contribuido 33 presentaciones en congresos internacionales como primer autor y otras 70 como coautor. También he impartido aproximadamente 30 conferencias invitadas en distintos foros y realizado múltiples intervenciones en medios de comunicación. Por reseñar algunos ejemplos mis investigaciones han sido noticia en medios como The New York Times, The Guardian y Al Jazeera.

Mis investigaciones han sido financiadas por múltiples agencias, fundaciones, centros y empresas en España, Portugal y Reino Unido. De forma directa con 90000 € y en forma de recursos de cálculo en convocatorias competitivas con otros 1,2 millones de euros. Además he participado en muchos otros proyectos de investigación como coinvestigador.

He codirigido y codirijo en la actualidad varios proyectos fin de máster y una tesis doctoral. A lo largo de toda mi trayectoria he impartido docencia a todos los niveles en distintos programas en la Universidad de Vigo y la University of Oxford.



MINISTERIO
DE ECONOMÍA
Y COMPETITIVIDAD

AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2013

SECRETARÍA DE ESTADO
DE INVESTIGACIÓN
DESARROLLO E INNOVACIÓN

SECRETARÍA GENERAL
DE CIENCIA, TECNOLOGÍA
E INNOVACIÓN

DIRECCIÓN GENERAL
DE INVESTIGACIÓN
CIENTÍFICA Y TÉCNICA

SUBDIRECCIÓN GENERAL
DE RECURSOS HUMANOS
PARA LA INVESTIGACIÓN

Mi carrera investigadora se ha visto reconocida con varios premios en España, Portugal y Reino Unido y sido reseñada en la revista Science, mediante una entrevista como ejemplo para jóvenes investigadores.

Desde el punto de vista de mi situación en la comunidad científica internacional he sido editor jefe del boletín de ciencias atmosféricas de la American Geophysical Union, miembro del comité ejecutivo de ciencias atmosféricas de dicha sociedad, codirector del programa de la Organización Meteorológica Mundial en mi campo de investigación y revisor experto del 5º Informe del IPCC, participado en la cumbre de Naciones Unidas sobre Cambio Climático. He sido revisor de proyectos para la ANEP y en la actualidad soy el Editor Jefe de Física del Clima y Ciencias Atmosféricas de la prestigiosa revista PLoS ONE.



MINISTERIO
DE ECONOMÍA
Y COMPETITIVIDAD

AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2013

SECRETARÍA DE ESTADO
DE INVESTIGACIÓN
DESARROLLO E INNOVACIÓN

SECRETARÍA GENERAL
DE CIENCIA, TECNOLOGÍA
E INNOVACIÓN

DIRECCIÓN GENERAL
DE INVESTIGACIÓN
CIENTÍFICA Y TÉCNICA

SUBDIRECCIÓN GENERAL
DE RECURSOS HUMANOS
PARA LA INVESTIGACIÓN

Nombre: JORDA SANCHEZ, GABRIEL

Referencia: RYC-2013-14714

Área Científica: Ciencias de la Tierra

Correo Electrónico: gabriel.jorda@uib.es

Título:

Mediterranean Marine Climate

Resumen de la Memoria:

I got my degree in Physics at the University of the Balearic Islands (UIB) in 1998 and then I moved to Barcelona to work at the Marine Engineering Laboratory of the Polytechnics University of Catalonia (LIM-UPC) as a post-graduate researcher. During that period I worked on the development and implementation of numerical models applied to different coastal problems such as waste management or water circulation in harbours. When my supervisor quit the research, I moved to the Laboratoire d'Études Géophysiques in Toulouse (France). During my stay in Toulouse (2002-2005) I developed new skills on data assimilation with Dr. Pierre de Mey and on numerical modelling with Dr. Patrick Marsaleix. The work carried out in Toulouse constituted the body of my PhD thesis, which included the first comprehensive characterization of the physical processes characterizing the northeastern continental shelf of Spain and a new data assimilation method for coastal applications.

After my PhD, I worked for more than two years at LIM-UPC, where I applied my knowledge on numerical modelling to a broad range of studies on coastal oceanography, operational oceanography and physical-biological interactions. During that period I participated in six projects and contracts, being the responsible of many of the tasks assigned to the LIM-UPC group. A significant part of the work carried out during that period has been transferred to the society. In particular, I developed a relocatable numerical model for emergency situations that has been adopted by the Spanish Search and Rescue service in different real sea emergencies; a light and portable oil spill forecasting system used after the Prestige crisis; and a risk management system for water quality in harbours that has been adopted by the Spanish Holding of Harbours.

In 2008 I moved to Mallorca to work at the Mediterranean Institute for Advanced Studies (IMEDEA), where I have been working up to date. During my first year there I worked on the pioneering SMOS satellite mission. In particular, I was in charge of the development of the L3 mapping algorithm adopted by the SMOS Processing Centre to generate the salinity L3 products that are routinely delivered worldwide. Later on, in 2010 I got a JAE-DOC contract from the Spanish Research Council (CSIC), which has given me a relatively long period of stability, allowing me to focus on what is now my main line of research: the Mediterranean marine climate.

My first steps on the field of marine climate actually started in 2009 and were aimed to the generation of reliable information about the evolution of marine parameters for the XXI century. Thus, I started generating the first ensemble of storm surge and waves for southern Europe. The next step was aimed to produce projections of mean sea level. However, we realized that most of the analyses performed so far in the Mediterranean were based on wrong assumptions. Therefore we first developed the theoretical framework requested to estimate sea level projections in semi-enclosed basins. The importance of this result is paramount, as far as we have shown that Mediterranean sea level projections had been largely underestimated and that the Mediterranean coasts are under a more serious threat than thought before. In parallel I have also worked on the interaction between climate and ecology, particularly on how the physical conditions can modify the coastal ecosystems and hence on how climate change can affect them.

Resumen del Currículum Vitae:

My career can be summarised along three axes:

(1) Scientific research carried out at the international level.

This is credited by 40 SCI papers (35 in the first Quartile, 26 as a lead or co-lead author), including 2 papers in Nature Climate Change; the international awards referred above; more than 100 presentations in conferences (7 of them invited); the participation in 26 projects or contracts (8 of them at the international level), acting as PI of two international initiatives and of the Spanish contribution to three international projects, in addition of being one of the coordinators of an European network. Also, since 2013 I have been working at the National Oceanography Centre (Southampton, UK) as an invited scientist. This adds to the 29 months spent abroad during my pre-doc period. As a result of this activities I have permanent collaborations with several teams in France (CNRM and LEGOS in Toulouse; LPO in Brest), England (NOC in Southampton), Germany (MPI in Hamburg), Italy (ENEA, Rome) and Croatia (IOR, Split).



MINISTERIO
DE ECONOMÍA
Y COMPETITIVIDAD

AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2013

SECRETARÍA DE ESTADO
DE INVESTIGACIÓN
DESARROLLO E INNOVACIÓN

SECRETARÍA GENERAL
DE CIENCIA, TECNOLOGÍA
E INNOVACIÓN

DIRECCIÓN GENERAL
DE INVESTIGACIÓN
CIENTÍFICA Y TÉCNICA

SUBDIRECCIÓN GENERAL
DE RECURSOS HUMANOS
PARA LA INVESTIGACIÓN

(2) Transfer of knowledge to the society.

This is credited by the development of new operational systems adopted by the Spanish Search and Rescue Agency and the Spanish Holding of Harbours; by the generation of the institutional marine climate scenarios of Spain (following a commission of the Spanish government); by the participation as a scientific consultant on climate change in several boards; and by a wide outreach activity.

(3) Formation of new scientists.

This has been achieved through the organization or contribution to courses at different levels and the supervision of students (PhD, Master degree and Degree)



MINISTERIO
DE ECONOMÍA
Y COMPETITIVIDAD

AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2013

SECRETARÍA DE ESTADO
DE INVESTIGACIÓN
DESARROLLO E INNOVACIÓN

SECRETARÍA GENERAL
DE CIENCIA, TECNOLOGÍA
E INNOVACIÓN

DIRECCIÓN GENERAL
DE INVESTIGACIÓN
CIENTÍFICA Y TÉCNICA

SUBDIRECCIÓN GENERAL
DE RECURSOS HUMANOS
PARA LA INVESTIGACIÓN

Nombre: NADAL ROMERO, MARIA ESTELA
Referencia: RYC-2013-14371
Área Científica: Ciencias de la Tierra
Correo Electrónico: estelanr@hotmail.com

Título:

Erosion and Environmental Hydrology

Resumen de la Memoria:

My research has been devoted to the integration of interdisciplinary knowledge derived from the geomorphological, hydrological, climatology, soil science and ecological disciplines for the study of Mediterranean mountain areas.

Since 2007, I have continuously participated in a diverse array of research projects, on a regional, national and international level funded by public and competitive programs.

My initial research was concerned with the study of geomorphological and hydrological processes in humid badland areas, using a combined approach of field and laboratory experiments. Significant contributions arising from this research are: (i) an in-depth characterization of physical and chemical weathering processes, (ii) a detailed analysis of the hydrological response, erosion processes and sediment transport, (iii) an investigation to establish the relationships between erosion and vegetation dynamics, and (iv) a global approach to badland dynamics in Mediterranean areas by applying large-scale analysis.

I diversified my hydrological and geomorphological research by incorporating the study of different land uses and land covers (forest, abandoned fields, shrubs) at catchment scale and at plot scale.

After the completion of my PhD in 2008, I expanded my research topics in my postdoctoral positions. The first stage at the University of Leuven allowed me to analyze piping erosion processes. Further investigation into soil erosion was related to the effect of extreme events on erosion and time compression of erosion processes, and the relationship between weather types and erosion in the Iberian Peninsula and global knowledge of soil erosion in Mediterranean areas.

During 2014, I will join the group of Prof. Cammeraat at the University of Amsterdam as a postdoctoral researcher, funded by a fellowship Marie Curie-IEF. The main topic of this research project will be evaluating the environmental consequences of afforestations in Mediterranean mountain areas.

Overall, my work has been reported in 27 refereed international journal papers (plus 5 under review), 16 papers in national journals, 35 book chapters and 66 contributions in 29 national and international conferences. My research findings have been published in leading international journals across the geomorphological, soil, hydrological sciences, such as *Progress in Physical Geography*, *Geomorphology*, *Catena*, *Earth Surface Processes and Landforms* or *Journal of Hydrology*. To date, and about 7 years after my first journal paper was published (May 2007), my articles have been cited by a total of 161 studies (301 citations in Scopus, February 2014), stressing the high international relevance of my work, with an H index of 10.

I have worked in several teaching activities. I have participated as Postdoctoral assistant-teacher in Bachelor of Geography and Master on Environment Sciences and Spatial Planning at the University of Zaragoza. I was also guest lecturer for the Master on Advance in Geomorphology at the University of Leuven.

Resumen del Currículum Vitae:

Since its start, my research has been devoted to the integration of interdisciplinary knowledge derived from the geomorphological, hydrological, climatology, soil science and ecological disciplines for the study of Mediterranean mountain areas.

My research has always been funded by competitive national and international programs. I obtained a BSc in Geography in August 2003 (Univ. Zaragoza) and a PhD in Geography with honours (Cum Laude) in May 2008 (Univ. Zaragoza). I was awarded a four-year PhD fellowship in January 2004 (funded by the CSIC in the framework of Program I3P supported jointly by the European Social Program) (2004-2007). During my pre-doctoral period, I was also visiting-researcher at the Istituto di Ricerca per la Protezione Idrogeologica supervised by Dr. Dino Torri, Florence (Italy) where I learned laboratory techniques for estimating aggregate stability processes. I obtained a postdoctoral contract from the Pyrenean Institute of Ecology (CSIC) in 2008, supervised by Dr. José M. García-Ruiz.

After finalizing my PhD, I was awarded a Postdoctoral Fellowship from the Spanish Ministry, and I moved to Leuven (Belgium), where I joined to the Department of Earth and Environmental Sciences of the Katholieke Universiteit Leuven (Belgium) during 2009-2010, supervised by Dr. Jean Poesen. Following my postdoctoral research, I was awarded a Juan de la Cierva grant (36 months) from the Spanish Ministry to join the Geography Department at the University of Zaragoza (2011-2013), supervised by Dr. Carlos González-Hidalgo.

Since 2007, I have continuously participated in a diverse array of research projects, on a regional, national and international level funded by public and competitive programs.

Overall, my research work has been reported in 27 refereed international journal papers (plus 5 under review), 16 papers in national journals, 35 book chapters and 66 contributions in 29 national and international conferences and nearly 300 citations.

I obtained teaching experience through responsibility for various courses (200 hours in the last 3 years) at the University of Zaragoza and



MINISTERIO
DE ECONOMÍA
Y COMPETITIVIDAD

AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2013

SECRETARÍA DE ESTADO
DE INVESTIGACIÓN
DESARROLLO E INNOVACIÓN

SECRETARÍA GENERAL
DE CIENCIA, TECNOLOGÍA
E INNOVACIÓN

DIRECCIÓN GENERAL
DE INVESTIGACIÓN
CIENTÍFICA Y TÉCNICA

SUBDIRECCIÓN GENERAL
DE RECURSOS HUMANOS
PARA LA INVESTIGACIÓN

the supervision of 3 MSc in Belgium and Spain.

I have been guest editor of the international soil science journal *Catena* in a special issue *Updating Badland Research*. Additionally, since 2013, I am associate editor of SOIL (editorial board) since 2013, an open access journal of the Soil System Science Division of the European Geoscience Union and member of the editorial board of Cuadernos de Investigación Geográfica. Moreover, I am member of the panel of Young Scientific of the Soil System Division of the EGU.

I have acquired a broad range of skills and developed strong independent thinking to achieve my past research landmarks and undertake new challenges in my future career. I have successfully tackled this complex task by interacting with several experienced scientists all around the world. The potential to develop international collaborations is demonstrated in the wide international network of collaborations established to date with key researchers.

I will join the group of Professor Cammeraat at the University of Amsterdam as a postdoctoral researcher, funded by a fellowship Marie Curie-IEF (April 2014-March 2016). The main topic of this research project will be evaluating the environmental consequences of afforestations in Mediterranean mountain areas



MINISTERIO
DE ECONOMÍA
Y COMPETITIVIDAD

AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2013

SECRETARÍA DE ESTADO
DE INVESTIGACIÓN
DESARROLLO E INNOVACIÓN

SECRETARÍA GENERAL
DE CIENCIA, TECNOLOGÍA
E INNOVACIÓN

DIRECCIÓN GENERAL
DE INVESTIGACIÓN
CIENTÍFICA Y TÉCNICA

SUBDIRECCIÓN GENERAL
DE RECURSOS HUMANOS
PARA LA INVESTIGACIÓN

Nombre: CASANOVAS VILAR, ISAAC
Referencia: RYC-2013-12470
Área Científica: Ciencias de la Tierra
Correo Electrónico: isaac.casanovas@icp.cat

Título:

Evolution and paleobiology of Neogene European rodent faunas. Applications to biochronology, paleobiogeography and paleoclimatic reconstruction.

Resumen de la Memoria:

Graduated in Geology at the Universitat Autònoma de Barcelona (UAB) in 2002, he obtained his PhD in 2007 with a thesis on the Miocene rodent faunas of Catalonia directed by Prof. Jordi Agustí from the Institut de Paleontologia M. Crusafont (IPS). He already published some papers in top SCI journals of his field such as Palaeogeography, Palaeoclimatology, Palaeoecology (Casanovas-Vilar & Agustí, 2007) while he was writing his thesis. On the other hand, he collaborated with the research group on fossil primates of the IPS publishing their results in Science (Moyà-Solà et al., 2004). After his thesis he joined the staff of the Neogene and Quaternary Faunas Department of the Institut Català de Paleontologia (ICP) where he specialized in the study of the Miocene rodent faunas and their application in biochronological and paleoecological studies. In collaboration with the Palaeoprimateology Department of the ICP he published a series of papers on the dating of the Miocene primate sites of Europe in the highest-ranked anthropology journals as well as in the prestigious multidisciplinary Proceedings of the National Academy of Sciences of the USA (Casanovas-Vilar et al., 2011). Following his doctorate, he also stayed as visiting researcher at the Naturalis Biodiversity Center (Leiden, the Netherlands). There he collaborated with several researchers in studies on the paleobiogeography of Miocene European mammal faunas leading to works that have been published in top journals on ecology including Journal of Biogeography (Casanovas-Vilar et al., 2010). He also stayed as visiting researcher at the Università degli Studi di Firenze (Florence, Italy) where he collaborated in the study of the fossil insular faunas of Tuscany and Sardinia. Between 2011 and 2013 he held a Juan de la Cierva research contract and he also directed the project CGL2010-21672 of the Spanish MINECO. This project comprised an international team and aimed for the reconstruction of the paleobiology of fossil micromammals using modern methodologies (geometric morphometrics, microwear analysis, stable isotope analysis, etc.). It resulted in more than 50 publications of which stand out a number of papers in specialized SCI journals such as Journal of Vertebrate Paleontology and Journal of Human Evolution, as well as those published in prestigious multidisciplinary journals such as Proceedings of the National Academy of Sciences of the USA and PLoS ONE.

References:

- Casanovas-Vilar, I. & Agustí, J. (2007). Palaeogeog. Palaeoclimatol. Palaeoecol. 248: 169-189.
Casanovas-Vilar, I. et al. (2010). J. Biogeogr. 37: 1079-1093.
Casanovas-Vilar, I. et al. (2011). Proc. Natl. Acad. Sci. U.S.A. 108: 5554-5559.
Moyà-Solà, S. et al. (2004). Science 306: 1339-1344.

Resumen del Currículum Vitae:

Isaac Casanovas Vilar graduated in Geology at the Universitat Autònoma de Barcelona in 2002 and obtained his PhD in 2007. Immediately after that he joined the staff of the Institut Català de Paleontologia (ICP) and in 2011 he was granted with a Juan de la Cierva contract linked to the Paleoprimateology and Human Evolution Department of the ICP. After finishing this contract in December 2013 he stayed at the ICP as postdoctorate researcher in the Neogene and Quaternary Faunas Department.

He has taken part in several competitive R&D&I projects, four of them international. He has also coordinated the project CGL2010-21672 founded by the Spanish MINECO. This project focused in the reconstruction of the paleobiology of Neogene small mammals and comprised an international team belonging to several European research centers. The output of this project consisted in more than 50 publications between 2011 and 2013.

While he was a student he received two grants to assist in the research projects of the Institut de Paleontologia M. Crusafont. He later obtained a PhD grant from the Generalitat de Catalunya to conduct his doctoral thesis. Finally, in 2011 he obtained a Juan de la Cierva research contract (JCI-2010-08241) linked to the Paleoprimateology and Human Paleontology Department of the ICP. Additionally, he has received travel grants by European Science Foundation (2003), the Synthesys Program of the European Union (2008) and the Agencia Española de Cooperación Internacional para el Desarrollo (2008). These allowed to strengthen his international collaborations as well as to consult large scientific collections kept in foreign institutions.

His scientific production includes 77 publications counting journal articles, book chapters and conference proceedings in journals. 40 of them are published in SCI journals, and amongst these 27 are published in journals that are in the top 25% of their category. Such journals include prestigious multidisciplinary journals such as Science, Proc. Nat. Acad. Sci. USA and PLoS ONE, as well as specialized journals in paleontology (Palaeogeog. Palaeoclimatol. Palaeoecol.; J. Vert. Pal.), ecology (Journal Biogeogr.) and physical anthropology (J. Hum. Evol., Am. J. Phys. Anthropol.). The rest of his publications include papers or conference proceedings in non-SCI journals (22, mostly



MINISTERIO
DE ECONOMÍA
Y COMPETITIVIDAD

AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2013

SECRETARÍA DE ESTADO
DE INVESTIGACIÓN
DESARROLLO E INNOVACIÓN

SECRETARÍA GENERAL
DE CIENCIA, TECNOLOGÍA
E INNOVACIÓN

DIRECCIÓN GENERAL
DE INVESTIGACIÓN
CIENTÍFICA Y TÉCNICA

SUBDIRECCIÓN GENERAL
DE RECURSOS HUMANOS
PARA LA INVESTIGACIÓN

international) and chapters in edited books (14). Furthermore, he has presented his work in more than 50 communications in congresses, both international (33) and national (23). Amongst these, 3 conferences in international congresses were invited conferences. He is member of the International Paleontological Society and the Regional Committee on Mediterranean Neogene Stratigraphy. Furthermore, he coordinates the data on rodent taxonomy and ecomorphology for the NOW database on fossil mammals. He has collaborated in the organization of a few congresses. Finally, he has been invited to review papers for several national and international journals, including the prestigious PLoS ONE, J. Hum. Evol. and Palaeogeog. Palaeoclimatol. Palaeoecol. He has made a number of stays as visiting researcher in the Department of Earth Sciences of the University of Torino in Italy (during 2007, 2009 and between 2011-2012) and the Naturalis Biodiversity Center in the Netherlands (during 2008 and 2009). During these research stays he started working with teams of the host institutions and has published several papers as a result of these collaborations



MINISTERIO
DE ECONOMÍA
Y COMPETITIVIDAD

AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2013

SECRETARÍA DE ESTADO
DE INVESTIGACIÓN
DESARROLLO E INNOVACIÓN

SECRETARÍA GENERAL
DE CIENCIA, TECNOLOGÍA
E INNOVACIÓN

DIRECCIÓN GENERAL
DE INVESTIGACIÓN
CIENTÍFICA Y TÉCNICA

SUBDIRECCIÓN GENERAL
DE RECURSOS HUMANOS
PARA LA INVESTIGACIÓN

Nombre: MARTRAT SOTIL, BELEN
Referencia: RYC-2013-14073
Área Científica: Ciencias de la Tierra
Correo Electrónico: belen.martrat@idaea.csic.es

Título:

NATURAL ENVIRONMENT, HUMAN ACTIVITY & CLIMATE INTERACTIONS IN THE NORTH ATLANTIC REGION ― CLUES FROM PAST FOR FUTURE

Resumen de la Memoria:

Palaeoclimate studies have traditionally focused on long geological periods, which have widened our perspective of climate changes. However, if we are to evaluate the risk of abrupt changes in periods similar to the present, we first need to understand the historical period, improve the description of the climate during the last centuries and during warm periods equivalent or similar to the present one. Within the Anthropocene new era, the consequences of rapid transition phenomena are as yet to be explored. The general objective considered throughout my research is to work towards understanding and setting boundaries for possible causes and consequences of rapid changes occurring when thresholds and tipping points are crossed. The North Atlantic is taken as the laboratory for tracing these processes, with particular emphasis on the Arctic and Mediterranean regions. The tools for detecting them are fossil organic compounds originally forming part of diverse organisms, such as bacteria, archaea or eucarya (e.g. marine and terrestrial flora) found within strata conveniently selected by using geological and archaeological criteria. If I am awarded the RAMÓN Y CAJAL fellowship, my principal aim is to estimate the next bifurcation of the climatic system by identifying the pace of environmental changes in past periods in the North Atlantic. This is important for decisions on actions in mitigation, adaptation and risk reduction. Advancing in this research line will strengthen our capability to monitor the efficiency of policies to reach any environmental target, such as the 2°C global warming target imposed to avoid predicted societal and environmental disruptions [The Fifth Assessment Report (AR5); Working Group I Contribution to the IPCC Fifth Assessment Report Climate Change 2013: The Physical Science Basis (2013)]. Knowledge on periods when the Earth was as warm as or warmer than the present will provide a unique tool to explain gradual and abrupt natural changes and how these changes interact with those presumably originating from human influence.

Essential background considered throughout my research:

- 1 To develop the hypothesis to be tested, i.e. whether in European latitudes we are living the end of the present warm period, at least on a human scale.
- 2 To establish the thresholds and tipping points which result in sudden jumps in either the mean state or scale of high frequency natural variability to delimit environmental conditions prior to and through transitions.
- 3 To define the spatial-temporal fingerprint of significant or abrupt climate events during the current and previous warm periods and compare them with more gradual transitions.
- 4 To evaluate the likelihood of sudden shifts within warm climate behaviour and how these changes interact with those presumably originating from human influence.
- 5 To verify the dynamics of rapid climate events and transitions using model-data comparisons, confirm whether palaeo-reconstructions are comparable with observations-instrumental data and thus, whether past and present climate measurements are suitable tools for understanding changes to come.

Resumen del Currículum Vitae:

Positions. I've been awarded a JAE-Doc contract at CSIC-IDEA [01/2012-12/2014] and the Shackleton award by the University of Cambridge [since 05/2012; elected into Life Membership of Clare Hall College as linked honours]. Previously, I was awarded a JUAN DE LA CIERVA contract at the University of Barcelona (UB) [01/2009-12/2011]. I was postgraduate visiting research fellow at the University of Cambridge funded by the EAOG award [02/2007-12/2007; supervision of I. N. McCave, Woodwardian Prof. of Geology, and L. C. Skinner, Royal Society University Research Fellow]. Previous activities and fellowships (01/2000-12/2006) were developed at CSIC-IIQAB [supervised by J. O. Grimalt, Research Prof. CSIC]. Education. I was admitted to the degree of Doctor of Natural Sciences magna Cum laude (B.Sc. in Agricultural Engineering - soil sciences and environmental management, University of Lleida); PhD dissertation presented as a compendium of publications in peer-reviewed journals; attended more than 20 postgraduate programmes on the subject of environmental issues, e.g. Climate change & children's health (2010), Climate variability in the Iberian peninsula (2011). Teaching & organising experience. Since 2008, mentoring graduate research students (2 PhD, 9 Masters), including writing papers with them and teaching doctorate master students at the UB on the subject Palaeoclimatic reconstructions: the marine archive. Reviewer for ELSEVIER (2013, 2012, 2004), SCIENCE (2011), AGU (2014, 2010, 2009, 2006), EGU (2013, 2008), etc. Since 2008, coordinating laboratory tasks (3 research assistants),



MINISTERIO
DE ECONOMÍA
Y COMPETITIVIDAD

AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2013

SECRETARÍA DE ESTADO
DE INVESTIGACIÓN
DESARROLLO E INNOVACIÓN

SECRETARÍA GENERAL
DE CIENCIA, TECNOLOGÍA
E INNOVACIÓN

DIRECCIÓN GENERAL
DE INVESTIGACIÓN
CIENTÍFICA Y TÉCNICA

SUBDIRECCIÓN GENERAL
DE RECURSOS HUMANOS
PARA LA INVESTIGACIÓN

organising and participating actively in recent samplings for retrieving sediments and soils in the Tagus abyssal plain (2012), Svalbard isles (2010), Alboran, Sicily and Balearic areas (2008-2013) and Atapuerca (2009). Contributor to the Regional Climate Change Assessment Report 2010 Climate in Spain and to the Scientific Committee for updates from the Fifth IPCC Report relevant at Mediterranean scale. Funding. I have played an active role in 14 projects; e.g. GRACCIE [CSD2007-00067; 6.353.257 EUR; 10/2007-09/2013], PAST4FUTURE [FP7-ENV-2009-1-243908, 6.647.909 EUR; 01/2010-12/2014], the Past Global Changes (PAGES) project within the Past InterGlacials (PIGs, 01/2008- 12/2013) [team's formation, objectives and methods synthesized in NATURE GEOSCIENCE 2 751 (2009)] and Ocean 2k (O2k, 01/2012-12-2006) [as Arctic and Mediterranean regional leader_Steering Committee; NATURE GEOSCIENCE 6 339 (2013)]. Scientific contributions. I have participated in 61 congresses, more than 90% at international level and approx. 60% as an invited speaker. I am an active member of the Shackleton Site Project [The "Shackleton Site" (IODP Site U1385) on the Iberian margin' SCIENTIFIC DRILLING, IODP] and the MEDCLIVAR international network to coordinate and promote the study of the Mediterranean climate. My contributions are being published in journals with high impact factors (e.g. SCIENCE, GEOLOGY, QSR, PALEO., etc) and are frequently cited (average citations per year: 49), meaning that they are opening a valuable line of research appreciated by the scientific community. The level of authorship involves devising my own strategy for the work, designing and performing the scientific approach (sampling, analyses, etc), reviewing and interpreting the results obtained, discussing them with co-authors, writing the manuscript and defending the conclusions reached in front of experts.



MINISTERIO
DE ECONOMÍA
Y COMPETITIVIDAD

AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2013

SECRETARÍA DE ESTADO
DE INVESTIGACIÓN
DESARROLLO E INNOVACIÓN

SECRETARÍA GENERAL
DE CIENCIA, TECNOLOGÍA
E INNOVACIÓN

DIRECCIÓN GENERAL
DE INVESTIGACIÓN
CIENTÍFICA Y TÉCNICA

SUBDIRECCIÓN GENERAL
DE RECURSOS HUMANOS
PARA LA INVESTIGACIÓN

Nombre: GOMEZ PACCARD, MIRIAM
Referencia: RYC-2013-14405
Área Científica: Ciencias de la Tierra
Correo Electrónico: mgomezpaccard@gmail.com

Título:

Paleomagnetic and rock-magnetic techniques: a window onto geomagnetic field changes and Holocene climate variability

Resumen de la Memoria:

My expertise in the field of paleomagnetism derives from my PhD research conducted at Géosciences-Rennes (France) between 2003 and 2006, within the framework of the Research Training Network AARCH: Archaeomagnetic Applications for the Rescue of Cultural Heritage funded by the EU. The aim of this network was to investigate the paleosecular variation of the geomagnetic field in Europe as recorded by heated archeological materials. I was in charge of the application of the paleomagnetic techniques to recover the full-vector geomagnetic field changes in Western Europe during the last few millennia. During my PhD I obtained the first secular variation curve for the Iberian Peninsula. My PhD research has been published in several SCI journals and provides not only new archeomagnetic data from unexplored regions but also new geophysical constraints that improve our knowledge of the dynamics of the geomagnetic field in the past.

After my PhD, I have been able to conduct my research through funding obtained in individual competitive grants: Juan de la Cierva (Universitat de Barcelona, 2007-2009), JAE-Doc (CSIC, 2009-2013) and Marie Curie IEF-2012 (Université de Rennes 1, March 2013 to present). Nowadays, I lead archeomagnetic research in Europe and I am interested on the application of the paleomagnetic and environmental-magnetic techniques to date and identify Holocene climate variability as recorded by continental sediments. My project **◆Paleomagnetic applications for dating and identifying Holocene climate variability in southwestern Europe and the Azores Islands as recorded by lake sediments◆** is currently being funded (19.2 k◆) by the EU. My main results (published in several SCI journals) related to the paleomagnetic and rock-magnetic studies of continental sequences are: 1) the first paleomagnetic study of Holocene sediments from Lake Issyk-Kul and its implication in paleosecular variation changes in central Asia, a region that is key for unraveling teleconnections between high- and low-latitude climatic processes and 2) the application of the rock-magnetic approach to study the environmental response of fragile, semiarid landscape to Early Holocene climate variability

During my post-doctoral stages I also focused on high-resolution reconstructions of secular variation changes in Western Europe. Thanks to different international collaborations established during my career I am also involved on different paleomagnetic studies and projects devoted to regional geomagnetic field and/or Holocene climate variability characterization in Greece, North Africa, Mexico, the Azores Islands, Argentina, Kenya and Maritime Antarctic. I am particularly interested in the study of abrupt changes of the geomagnetic field intensity in the past. My work demonstrates that extreme intensity variations (of at least 20 μT per century) took place in the recent history of the Earth. This rate of change is much higher than previously believed (of $\sim 7 \mu\text{T}$ per century).

My research provides not only new data for regions and periods of time in which data are solely lacking but also new geophysical (as the maximum variability of geomagnetic field intensity) or climatic constraints (as the evidence of a progressive and not abrupt 8.2 ka climatic event in southwestern Europe) that improve our knowledge on the dynamics of the geomagnetic field and on past climate changes.

Resumen del Currículum Vitae:

I obtained my PhD degree in 2006 at the Université de Rennes 1 and the Universidad Complutense de Madrid thanks to a Marie Curie predoctoral position within the framework of the Research Training Network AARCH: Archaeomagnetic Applications for the Rescue of Cultural Heritage (HPRN-CT-2002-00219) funded by the European Union. The aim of this network, in which 12 of the main European paleomagnetic laboratories participated, was to investigate the paleosecular variation of the geomagnetic field in Europe as recorded by heated archeological materials. I was in charge of the application of the paleomagnetic techniques to recover the full-vector geomagnetic field changes in Western Europe during the last few millennia. The research conducted during my PhD provides not only new archeomagnetic data from unexplored regions but also new geophysical constraints that improve our knowledge of the dynamics of the geomagnetic field in the past.

Nowadays, I lead archeomagnetic research in Europe and I am also interested on the application of the paleomagnetic and environmental-magnetic techniques to date and identify Holocene climate variability as recorded by continental sediments. Since my thesis, I have been able to conduct my research through funding obtained in individual competitive grants: Juan de la Cierva (Universitat de Barcelona, 2007-2009), JAE-Doc (CSIC, 2009-2013) and Marie Curie IEF-2012 (Université de Rennes 1, March 2013 to present). Thanks to my experience and collaborations gained during my extended mobility, I have been involved in 12 projects (+ active collaboration in 4), including three European (PALEOCLACK project, AARCH and MAGNET networks) and three international funded projects (ANR and INSU French and CNR



MINISTERIO
DE ECONOMÍA
Y COMPETITIVIDAD

AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2013

SECRETARÍA DE ESTADO
DE INVESTIGACIÓN
DESARROLLO E INNOVACIÓN

SECRETARÍA GENERAL
DE CIENCIA, TECNOLOGÍA
E INNOVACIÓN

DIRECCIÓN GENERAL
DE INVESTIGACIÓN
CIENTÍFICA Y TÉCNICA

SUBDIRECCIÓN GENERAL
DE RECURSOS HUMANOS
PARA LA INVESTIGACIÓN

Italian funded projects). I am the principal coordinator of the PALEOCLACK project funded by the EU (19.2 k€). I have also participated in 9 research groups with scientists from different countries and in 11 research contracts with public or private companies.

I have published 19 SCI papers, among which I am 12 times first and 4 times second author, 14 non SCI papers or scientific documents, and presented my results in 55 contributions to national and international meetings. My SCI papers have been cited 237 times and ~60% of them are published in journals that are in the 1st quartile of their respective categories. My h-index is 8. As a result of my expertise I have been invited to present my results in the EGU 2008 and AGU 2013 international meetings, was a member of the scientific committees of four congresses including the AGU Fall 2013 and the EGU 2014 meetings.

During my career I have acquired solid expertise in the application of the paleomagnetic and rock-magnetic techniques to solve different problems in a broad range of disciplines within the Earth Sciences, such as geomagnetism, paleoclimatology, geochronology, stratigraphy, basin analysis, tectonics and archeology. I consider that my expertise in these techniques and methods, along with the interest of the EU in my Research Themes (the new EU Framework Programme for Research and Innovation HORIZON 2020 identifies the study of climate action, resource efficiency and raw materials as one of the main challenges of the EU) act as guarantor for the successful development of my research topics.



MINISTERIO
DE ECONOMÍA
Y COMPETITIVIDAD

AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2013

SECRETARÍA DE ESTADO
DE INVESTIGACIÓN
DESARROLLO E INNOVACIÓN

SECRETARÍA GENERAL
DE CIENCIA, TECNOLOGÍA
E INNOVACIÓN

DIRECCIÓN GENERAL
DE INVESTIGACIÓN
CIENTÍFICA Y TÉCNICA

SUBDIRECCIÓN GENERAL
DE RECURSOS HUMANOS
PARA LA INVESTIGACIÓN

Nombre: PEY BETRAN, JORGE
Referencia: RYC-2013-14159
Área Científica: Ciencias de la Tierra
Correo Electrónico: jorge.pey@gmail.com

Título:

ATMOSPHERIC POLLUTION IN THE MEDITERRANEAN BASIN: VARIABILITY, SOURCES AND TRENDS ACCORDING TO METEOROLOGICAL AND CLIMATIC CONTEXTS

Resumen de la Memoria:

I am a 33 years-old scientist. The first part of my scientific career took place in the research group of Professor Xavier Querol in Barcelona (Spain), one of the most active and well-considered European teams in the field of atmospheric sciences. In January 2008, I defended my PhD thesis "Physical and chemical characterization of atmospheric aerosols in the western Mediterranean". After that, I remained in Querol's team until 2011. During my trajectory in Barcelona I was involved in several research projects and activities at regional, national and international contexts. A substantial part of my scientific success is linked to my excellent instrumental aptitudes, thus I was persistently requested to participate in field campaigns, from their organization to their management. The other piece which explains my scientific attainments is my constant motivation, perseverance and interest. Overall, I conducted a number of self-designed experimental approaches and I developed innovative data-treatment procedures reflected in some of my publications. After my stay in Barcelona I owned a strong background in air quality management, atmospheric inorganic chemistry and source apportionment, as well as excellent technical skills.

In 2012, I moved to Rome as a postdoctoral researcher in the MED-Particles LIFE+ project, a mission devoted to assess PM exposure and their derived health outcomes in Mediterranean countries. In particular, I developed my expertise in natural sources of particulate matter (PM) to produce the first extended and consistent database (2001-2011) on: 1) daily Saharan dust contributions to ambient PM across the Mediterranean Basin; 2) the first integrated assessment on wildfires occurrence and their impact on PM.

Since January 2013, I am working in the University of Aix-Marseille in the framework of two projects funded by the French National Research Agency: SAM, Source of marine Aerosol particles in the Mediterranean atmosphere, and SAF-MED, Secondary Aerosol Formation in the Mediterranean). I moved to Marseille for two main reasons: 1) the wonderful instrumental park available in the Laboratoire Chimie Environnement; 2) the thematic of the projects is vastly or totally connected with marine and biogenic emissions, two main natural sources under-investigated.

In the last 10 years, I have participated in 40 research projects; I am author of 64 publications in SCI journals (1800 times cited), 13 as first author: my h-index is 21; co-author in 7 books; over 140 contributions in conferences and invited talks. I am supervising the PhD research of Anna Ripoll, focused on remote aerosols in high-altitude sites in southern Europe, and José Carlos Cerro, dedicated to investigate sources and trends of regional background aerosols in the north-western Mediterranean.

Resumen del Currículum Vitae:

In the last 10 years, I developed excellent technical and scientific skills, which allowed me to be involved in around 40 research projects at regional, national, and international contexts. Up to date I am author of 64 publications in SCI journals (1800 times cited), 13 as first author and my h-index is 21. Moreover, I have produced several scientific documents and reports for policy makers (Spanish Ministry of Environment, Autonomous Governments of different regions in Spain, European Topic Center-Environmental European Agency, EMEP). I am co-author in 7 books on air pollution, one of them includes the scientific and technical basis of the current Mitigation Plan for Air Pollution in Spain. I have contributed more than 140 times in conferences and invited talks at national and international frameworks. At present, I am supervising the PhD research of Anna Ripoll, focused on remote aerosols in high-altitude sites in southern Europe, and José Carlos Cerro, dedicated to investigate sources and trends of regional background aerosols in the north-western Mediterranean.

I consider myself as a multidisciplinary scientist, independent, ambitious, innovative and frequently with points of view different from those of other scientists.



MINISTERIO
DE ECONOMÍA
Y COMPETITIVIDAD

AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2013

SECRETARÍA DE ESTADO
DE INVESTIGACIÓN
DESARROLLO E INNOVACIÓN

SECRETARÍA GENERAL
DE CIENCIA, TECNOLOGÍA
E INNOVACIÓN

DIRECCIÓN GENERAL
DE INVESTIGACIÓN
CIENTÍFICA Y TÉCNICA

SUBDIRECCIÓN GENERAL
DE RECURSOS HUMANOS
PARA LA INVESTIGACIÓN

Nombre: PANDOLFI , MARCO
Referencia: RYC-2013-14036
Área Científica: Ciencias de la Tierra
Correo Electrónico: marco.pandolfi@idaea.csic.es

Título:

Optical, chemical and physical properties of atmospheric aerosols and their relationship

Resumen de la Memoria:

The main research activity of the applicant deals with the study of optical, chemical and physical properties of atmospheric aerosols by means of both in-situ and remote sensing techniques. The main objective of the applicant's research activity is to provide new findings to better understand the relationship existing between chemical/physical properties and optical properties of atmospheric aerosols. This information is fundamental for a better comprehension of the effects of atmospheric aerosols on climate.

The applicant is a physicist with a strong background in atmospheric aerosol optical properties gained developing/deploying advanced remote sensing instruments (LIDARs and ceilometers) for aerosol optical properties study at the IMAA-CNR (Italy; 1998-2006). Then the candidate moved to Barcelona where he joined the Geochemistry group of IDAEA-CSIC (Spain; 2006-present) which research activity was, at that time, mainly dedicated to the chemical and physical characterization of atmospheric aerosols.

Also thanks to the background of the applicant, the Geochemistry group started in 2009 a new research line devoted to study the optical properties of atmospheric aerosols (scattering, backscattering, absorption) in the Western Mediterranean at urban, regional and remote levels. At the end of 2009 the Group purchased its first instrument for aerosol scattering measurements (Nephelometer). The Group is now deploying 2 Nephelometers (scattering and backscattering), 2 Aethalometers (absorption) and 1 ceilometer (altitude resolved backscattering and cloud base height) for both in-situ and remote study of optical properties of aerosols and the applicant is the sole responsible for these instruments. From 2011 the applicant published three papers in a high impact review (ACP; Atmospheric Chemistry and Physics) on aerosol optical properties in the Western Mediterranean Basin at remote, regional and urban levels.

These papers, which are the first publications led by the IDAEA-CSIC on atmospheric aerosol optical properties, demonstrate, on one side, the potential of a multidisciplinary (chemistry-physics-optic) approach to the study of atmospheric aerosols and, on the other side, the capability of the applicant in leading the new research line (aerosol optical properties) of the Group.

The applicant complemented his main research activity by working in other aerosol-related research fields such as the study of the pollutant gas-phase at urban level (Paper published in ACP) and the effect of meteorology and SIA/SOA formation on PM concentrations at urban and regional levels in the Western Mediterranean Basin (Overview of the DAURE campaign; Accepted for publication in JGR).

The applicant is also expert in receptor models application for source identification and apportionment. This kind of model analyses are very important for pollution control strategies.

Very recently, the applicant's research activity is also dealing with the effect of atmospheric aerosols on health. On this topic the applicant led a work demonstrating, for the first time, the synergic effect of man-made pollutants on health by correlating the atmospheric mixing layer height with all-cause daily mortality in Barcelona. A paper related with this work is currently under consideration for publication in nature Geoscience.

Resumen del Currículum Vitae:

The applicant has more than 15 years experience in environmental research on atmospheric aerosols. His field of expertise includes the study of optical, chemical and physical properties of atmospheric aerosols, the study of aerosols effect on climate and the application of receptor models for source identification and apportionment and for pollution control strategies.

The applicant is responsible for the installation, operation and maintenance of the IDAEA-CSIC monitoring network (Barcelona [urban], Montseny [regional], Montsec [remote] measurement sites) for aerosol optical properties study in the Western Mediterranean Basin. He is also the responsible for the exploitation for scientific purposes of the data from the optical instruments available within the network, as demonstrated by the applicant's publications.

Currently, he is co-coordinator of a project (PRISMA; MEC , CGL2012-39623-C02-01; 2012-2015; 237.510 €) aimed to study the synergic effects of optical, chemical and physical properties of atmospheric aerosols on climate in the Western Mediterranean Basin. Within the PRISMA project the applicant is the responsible for the tropospheric aerosol optical measurements. Moreover, the candidate is supervisor of a PhD Thesis dedicated, in part, to the results of the PRISMA project and titled: "Aerosol optical properties and radiative forcing in the Western Mediterranean Basin". PhD student Ealo Alonso Marina, University of Barcelona.

He has authored/co-authored more than 60 articles and actively participated in more than 30 national/European projects and his h-index is currently 15. The applicant's papers and CV demonstrate the multidisciplinary experience of the applicant.

He is responsible for the IDAEA aerosol optical measurements performed within ACTRIS (Aerosols, Clouds, and Trace gases Research InfraStructure Network; www.actris.net) which is a European Project building the next generation of the ground-based component of the EU observing system by integrating three existing research infrastructures EUSAAR, EARLINET and CLOUDNET. Within ACTRIS the candidate



MINISTERIO
DE ECONOMÍA
Y COMPETITIVIDAD

AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2013

SECRETARÍA DE ESTADO
DE INVESTIGACIÓN
DESARROLLO E INNOVACIÓN

SECRETARÍA GENERAL
DE CIENCIA, TECNOLOGÍA
E INNOVACIÓN

DIRECCIÓN GENERAL
DE INVESTIGACIÓN
CIENTÍFICA Y TÉCNICA

SUBDIRECCIÓN GENERAL
DE RECURSOS HUMANOS
PARA LA INVESTIGACIÓN

participates actively in the implementation of existing and development of new measurement protocols for aerosol optical properties. The capability of the applicant to manage and supervise the new research line of IDAEA-CSIC (aerosol optical properties) is also demonstrated by the fact that he was awarded with a JAE-DOC fellowship (2012-present) titled: **Optical Properties and Climate Impact of Atmospheric Aerosols as a Function of Their Age and Origin in the Western Mediterranean Basin**. With this fellowship the main objective of the applicant is to study the absorbing and scattering properties of aerosols in the Western Mediterranean Basin. The applicant is co-responsible for the Receptor Models application within the RETEMCA - Red Nacional Temática sobre Modelización de la Contaminación Atmosférica- and he is one of the three RM experts of CSIC involved in the WG2 (Source Apportionment) of the FAIRMODE (Forum for Air Quality Modelling in Europe; [www.http://fairmode.ew.eea.europa.eu](http://fairmode.ew.eea.europa.eu)) which is a joint response action of the European Environment Agency (EEA) and the European Commission Joint Research Centre (JRC) aimed to bring together air quality modellers and users in order to promote and support the harmonised use of receptor models by EU member countries, with emphasis on their application to the European Air Quality Directive.



MINISTERIO
DE ECONOMÍA
Y COMPETITIVIDAD

AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2013

SECRETARÍA DE ESTADO
DE INVESTIGACIÓN
DESARROLLO E INNOVACIÓN

SECRETARÍA GENERAL
DE CIENCIA, TECNOLOGÍA
E INNOVACIÓN

DIRECCIÓN GENERAL
DE INVESTIGACIÓN
CIENTÍFICA Y TÉCNICA

SUBDIRECCIÓN GENERAL
DE RECURSOS HUMANOS
PARA LA INVESTIGACIÓN

Nombre: MATAMOROS MERCADAL, VICTOR

Referencia: RYC-2013-12522

Área Científica: Ciencias de la Tierra

Correo Electrónico: vmmqam@gmail.com

Título:

Dinámica de microcontaminantes orgánicos en sistemas de tratamiento de aguas basados en procesos biológicos de bajo coste. Optimización y diseño

Resumen de la Memoria:

I received my bachelor's degree in Biochemistry and Biology from the University of Valencia in 2000 and 2002, respectively. I obtained my PhD (Summa Cum Laude, extraordinary Ph.D. award) in 2007, at the University of Barcelona advised by Prof Josep M. Bayona from the IDAEA-CSIC. My PhD explored the capability of constructed wetlands for removing microcontaminants. This work was pioneer and conducted to the publication of several papers amongst which 3 in the Environmental Science and Technology journal (Scopus source: 238 cites). In 2009 I was awarded a Juan de la Cierva postdoc grant at the University of Girona where I worked in a new research line based on the capability of biologically-based water reclamation systems (polishing ponds and Daphnia reactors) for removing emerging contaminants. In 2011 I did a PostDoc placement with Prof. Hans Brix to explore the effectiveness of aquatic plants and restored wetlands for removing emerging contaminants. In 2012 I was awarded a CSIC JAE-Doc grant at the IDAEA-CSIC where I participated in the EU project WATERPLASMA. Since 2013 I am the Principal Investigator of a Spanish National project (CTM2012-33547) which focus on the assessment of the processes involved in the removal of microcontaminants by eco-efficient biologically-based wastewater treatment technologies to make them more efficient and reliable (e.g. high rate algal ponds, ponds, tricking filters, wetlands). I have been collaborating (with publications) and guiding the career development of 3 Ph.D. students. Besides being author of three chapter books, 5 divulgative publications (Tecnología del Agua y Gaceta Universitaria) and 42 articles (h-index=19) published in peer reviewed scientific journals (including Environmental Science and Technology, Water Research, Bioresource Technology, Analytical Chemistry, among others), with a total number of citations >1000, I have over ten years of academic experience supervising various doctorate, master and undergraduate students. During my scientific career I have presented nearly 40 presentations in conferences and participated in the organization of the EucheMS international conference on Chemistry and the Environment on June 2013.

Resumen del Currículum Vitae:

I received my bachelor's degree in Biochemistry and Biology from the University of Valencia in 2000 and 2002, respectively. I obtained my PhD (Summa Cum Laude, extraordinary Ph.D. award) in 2007, at the University of Barcelona advised by Prof Josep M. Bayona from the IDAEA-CSIC. During the PhD I did an stay at Aarhus University (DK). In 2009 I was awarded a Juan de la Cierva postdoc grant at the University of Girona where I worked with Prof. Victòria Salvadó. In 2011 I did a PostDoc placement at the Aarhus University with Prof. Hans Brix to gain experience in the role of aquatic plants for removing microcontaminants. In 2012 I was awarded a CSIC JAE-Doc grant at the IDAEA-CSIC. I have participated in 5 international and 6 national projects obtained in competitive calls. Since 2013 I am the Principal Investigator of a 2-years national project (46,000 EUR, total budget) to evaluate the behaviour of emerging and priority organic contaminants in decentralized wastewater treatment plants at laboratory and field-scale. I supervised the PhD of Dr Calderón at IDAEA-CSIC (Cum laude, 2013) and currently supervising the PhD of Dr. García-Rodríguez at the University of Girona. I am author of three chapter books, 5 divulgative publications (Tecnología del Agua, Gaceta Universitaria y Sociedad Catalana de Química) and 42 articles (h-index=19) published in peer reviewed scientific journals (including Environmental Science and Technology, Water Research, Bioresource Technology, Analytical Chemistry, among others), with a total number of citations >1000. I am first author or corresponding author of most of them. During my scientific career I have presented nearly 40 presentations in conferences and participated in the organization of the EucheMS international conference on Chemistry and the Environment on June 2013. I am reviewer of more than 10 international scientific journals. I have been member of the PhD tribunal for María Hijoda-Valsero at the University of León.