

# **CURRICULUM VITAE**

## **Personal Data**

Prof. Manuel de Castro Muñoz de Lucas  
Department of Environmental Sciences  
University of Castilla-La Mancha  
Toledo, 47071 (Spain)

## **Education**

B.S., Physical Sciences, University Complutense of Madrid, 1976  
Ph.D., Atmospheric Physics, University Complutense of Madrid, 1981

## **Main research lines**

- Numerical Modelling of the Atmosphere
- Meteorological Forecasting Modelling
- Regional Climate Modelling
- Regional Scenarios of Climate Change

## **Professional Experience**

- Research Assistant, University Complutense of Madrid, Department of Geophysics and Meteorology, 1976-82
- Research Associate, University Complutense of Madrid, Department of Geophysics and Meteorology, 1982-84.
- Associate Professor, University Complutense of Madrid, Department of Geophysics and Meteorology, 1984-2001;
- Chair Professor, University of Castilla-La Mancha, Department of Environmental Sciences, 2001-
- Director, Institute of Environmental Sciences, University of Castilla-La Mancha, 2003-
- Visiting Scientist, San Jose State University, Department of Meteorology, 1986.
- Visiting Scientist, CALTECH, Department of Chemical Engineering, 1988

### **Professional Associations, Learned and Technical Societies: Memberships and Offices**

- Member Spanish Royal Physical Society, 1984-
- Member American Meteorological Society, 1986-
- Member Spanish Climatological Association, 1994-
- Member Spanish Commission of Geodesy and Geophysics, 2000-2008
- Spanish Representative at the World Climate Research Program (WCRP), 2000-2004
- Contributing Author, United Nations Intergovernmental Panel on Climate Change (IPCC) Third Assessment Report 2001, Chapter 10.
- Lead Author, United Nations Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report 2013, Chapter 12.

### **Invited Lectures at National and International Scholarly Meetings**

- Nuclear Energy Council of Spain, Institute for Nuclear Studies, Madrid, 1985
- National Health School of Spain, Department of Environmental Health, Madrid, 1987
- San Jose State University, Department of Meteorology, San Jose, California, May 1988
- ISpra Courses, Europe Joint Research Centre, Madrid, Spain, September 1988
- CNES, MEDIAS Regional Research Network, Toulouse, France, February, 1992
- International Summer School in Space Physics, CNES, Toulon, France, September 1992
- University of Lisbon, Department of Meteorology, Lisbon, Portugal, June 1996
- Laboratoire de Météorologie Dynamique, École Normale Supérieure, Paris, March 1998.
- Abdus Salam International Centre for Theoretical Physics, Climate Section, Trieste, Italy, March 2001
- Complutense University International Summer Course "*Climate Change: Updated knowledge and ahead challenges*" (course coordinator and lecturer) July 2007.

### **Other Invited Lectures**

- 5<sup>th</sup> International Congress, Spanish Environmental Health Society, Toledo, Spain, March 2005
- 6<sup>th</sup> International Congress, Spanish Climatological Association, Tarragona, Spain, May 2009
- 1<sup>st</sup> International Symposium CLIMATE-ES 2015, CLIVAR-WCRP, Tortosa, Spain, March 2015

### **Committees, Review Panels and Science Teams**

- Spanish Representative at the UNFCCC Assessment Committee, 2000
- Member, CLIVAR-Spain Committee, 2006-2010
- Member, Expert Panel on "Spain in the face of Climate Change", Spanish Climate Change Office, 2007
- Chair, Advisory Committee on Energy and Climate Change Strategic Action, SISE, FECYT, 2009

**Publications in Refereed Scientific Journals and edited books (Ranked onto number of citations from Scholar Google).**

JH Christensen, KK Kanikicharla, E Aldrian, Soon-Il An, IFA Cavalcanti, M de Castro, W Dong, P Goswami, A Hall, JK Kanyanga, A Kitoh, J Kossin, N-Ch Lau, J Renwick, DB Stephenson, Shang-Ping Xie, T Zhou (2013): "Climate Phenomena and their Relevance for Future Regional Climate Change" in *CLIMATE CHANGE 2013: THE PHYSICAL SCIENCE BASIS Contribution of Working Group I to the fifth Assessment of the Intergovernmental Panel on Climate Change*, Pgs. 1217-1308 ([729 citations](#))

M Déqué, DP Rowell, D Lüthi, F Giorgi, JH Christensen, B Rockel, D Jacob, Erik Kjellström, M de Castro, BJJM van den Hurk (2007): "An intercomparison of regional climate simulations for Europe: assessing uncertainties in model projections". *Climatic Change*, 81, 1, 53-70 ([667 citations](#))

D Jacob, L Bärring, OB Christensen, JH Christensen, M de Castro, M Déqué, F Giorgi, S Hagemann, M Hirschi, R Jones, E Kjellström, G Lenderink, B Rockel, E Sánchez, Ch Schär, SI Seneviratne, S Somot, A van Ulden, B van den Hurk (2007): An inter-comparison of regional climate models for Europe: model performance in present-day climate. *Climatic Change*, 81, 1, 31-52 ([600 citations](#))

E Sanchez, C Gallardo, MA Gaertner, A Arribas, M Castro (2004): Future climate extreme events in the Mediterranean simulated by a regional climate model: a first approach. *Global and Planetary Change*, 44, 1-4, 163-180 ([308 citations](#))

FJ Tapiador, FJ Turk, W Petersen, AY Hou, E García-Ortega, LAT Machado, CF Angelis, P Salio, Ch, GJ Huffman, M de Castro (2012): Global precipitation measurement: Methods, datasets and applications. *Atmospheric Research*, 104, 70-97 ([229 citations](#))

JH Christensen, B Machenhauer, RG Jones, C Schär, PM Ruti, M Castro, G Visconti (1997): Validation of present-day regional climate simulations over Europe: LAM simulations with observed boundary conditions. *Climate Dynamics*, 13, 7-8, 489-506 ([220 citations](#))

M Déqué, RG Jones, M Wild, F Giorgi, JH Christensen, DC Hassell, Pier Luigi Vidale, B Rockel, D Jacob, E Kjellström, M de Castro, F Kucharski, B van den Hurk (2005): Global high resolution versus Limited Area Model climate change projections over Europe: quantifying confidence level from PRUDENCE results. *Climate Dynamics*, 25, 6, 653-670 ([191 citations](#))

E Kjellström, F Boberg, M Castro, HJ Christensen, G Nikulin, E Sánchez (2010): Daily and monthly temperature and precipitation statistics as performance indicators for regional climate models. *Climate Research*, 44, 135-150 ([145 citations](#))

M de Castro, C Gallardo, K Jylha, H Tuomenvirta (2007): The use of a climate-type classification for assessing climate change effects in Europe from an ensemble of nine regional climate models. *Climatic Change*, 81, 1, 329-341 ([116 citations](#))

MM Millan, B Artinano, L Alonso, M Navazo, M Castro (1991): The effect of mesoscale flows on regional and long-range atmospheric transport in the Western Mediterranean area. *Atmospheric Environment Part A*, 25, 5-6, 949-963 ([109 citations](#))

- SA Solman, E Sanchez, P Samuelsson, RP da Rocha, L Li, J Marengo, NL Pessacg, ARC Remedio, SC Chou, H Berbery, H Le Treut, M de Castro, D Jacob (2013): Evaluation of an ensemble of regional climate model simulations over South America driven by the ERA-Interim reanalysis: model performance and uncertainties. *Climate Dynamics*, 41, 5-6, 1139-1157 ([100 citations](#))
- KP Hoinka, M. Castro (2003): The Iberian Peninsula thermal low. *Quarterly Journal of the Royal Meteorological Society*, 129, 1491-1511 ([71 citations](#))
- FJ Tapiador, R Checa, M de Castro (2010): An experiment to measure the spatial variability of rain drop size distribution using sixteen laser disdrometers. *Geophysical Research Letters*, 37, 16 ([66 citations](#))
- S Verant, K Laval, J Polcher, M de Castro (2004): Sensitivity of the continental hydrological cycle to the spatial resolution over the Iberian Peninsula. *Journal of Hydrometeorology*, 5, 2, 267-285 ([61 citations](#))
- B Rodriguez-Fonseca, M de Castro (2002): On the connection between winter anomalous precipitation in the Iberian Peninsula and North West Africa and the summer subtropical Atlantic sea surface temperature. *Geophysical Research Letters*, 29, 18 ([60 citations](#))
- MA Gaertner, D Jacob, V Gil, M Dominguez, E Padorno, E Sanchez, M Castro (2007): Tropical cyclones over the Mediterranean Sea in climate change simulations. *Geophysical Research Letters*, 34, 14 ([53 citations](#))
- A Arribas, C Gallardo, MA Gaertner, M Castro (2003): Sensitivity of the Iberian Peninsula climate to a land degradation. *Climate Dynamics*, 20, 5, 477-489 ([50 citations](#))
- B Rodriguez-Fonseca, I Polo, E Serrano, M Castro (2006): Evaluation of the North Atlantic SST forcing on the European and northern African winter climate. *International Journal of Climatology*, 26, 2, 179-191 ([46 citations](#))
- M de Castro, J Martín-Vide, S Alonso (2005): The climate of Spain: past, present and scenarios for the 21st century. *Revista Ministerio de Medio Ambiente. Spain*) ([44 citations](#))
- CG Menéndez, M de Castro, J-Ph Boulanger, A D'Onofrio, E Sanchez, AA Sörensson, J Blazquez, A Elizalde, D Jacob, H Le Treut, ZX Li, MN Núñez, N Pessacg, S Pfeiffer, M Rojas, A Rolla, P Samuelsson, SA Solman, C Teichmann (2010): Downscaling extreme month-long anomalies in southern South America. *Climatic Change*, 98, 3-4, 379-403 ([43 citations](#))
- E Sanchez, M Dominguez, R Romera, N Lopez de la Franca, MA Gaertner, C Gallardo, M Castro (2011): Regional modeling of dry spells over the Iberian Peninsula for present climate and climate change conditions. *Climatic Change*, 107, 3-4, 625-634 ([41 citations](#))
- J-Ph Boulanger, G Brasseur, AF Carril, M de Castro, N Degallier, C Ereño, H Le Treut, JA Marengo, CG Menendez, MN Nuñez, OC Penalba, AL Rolla, M Rusticucci, R Terra (2010): A Europe–South America network for climate change assessment and impact studies. *Climatic Change*, 98, 3-4, 307-329 ([41 citations](#))
- MA Gaertner, OB Christensen, JA Prego, J Polcher, C Gallardo, M Castro (2001): The impact of deforestation on the hydrological cycle in the western Mediterranean: an ensemble study with two regional climate models. *Climate Dynamics*, 17, 11, 857-873 ([39 citations](#))

E. Sanchez, M. A. Gaertner, C. Gallardo, E. Padorno, A. Arribas, M. Castro (2007): Impacts of a change in vegetation description on simulated European summer present-day and future climates. *Climate Dynamics*, 29, 2-3, 319-332 ([38 citations](#))

CG Menéndez, M de Castro, A Sorensson, J-Ph Boulanger (2010): CLARIS project: towards climate downscaling in South America. *Meteorologische Zeitschrift*, 19, 4, 357-362 ([37 citations](#))

A Portela, M Castro (1996): Summer thermal lows in the Iberian peninsula: A three-dimensional simulation. *Quarterly Journal of the Royal Meteorological Society*, 122, 529, 1-22 ([36 citations](#))

MA Gaertner, C Fernandez, M Castro (1993): A two-dimensional simulation of the Iberian summer thermal low. *Monthly Weather Review*, 121, 10, 2740-2756 ([34 citations](#))

E Sánchez, S Solman, ARC Remedio, H Berbery, P Samuelsson, RP da Rocha, C Mourão, L Li, J Marengo, M de Castro, D Jacob (2015): Regional climate modelling in CLARIS-LPB: a concerted approach towards twentyfirst century projections of regional temperature and precipitation over South America. *Climate Dynamics*, 45, 7-8, 2193-2212 ([32 citations](#))

E. Sanchez, R. Romera, M. A. Gaertner, C. Gallardo, M. Castro (2009): A weighting proposal for an ensemble of regional climate models over Europe driven by 1961-2000 ERA40 based on monthly precipitation probability density functions. *Atmospheric Science Letters*, 10, 4, 241-248 ([32 citations](#))

C Gallardo, A Arribas, JA Prego, MA Gaertner, M de Castro (2001): Multi-year simulations using a regional-climate model over the Iberian Peninsula: Current climate and doubled CO<sub>2</sub> scenario. *Quarterly Journal of the Royal Meteorological Society*, 127, 575, 1659-1681 ([32 citations](#))

C Gallardo, V Gil, E Hagel, C Tejada, M de Castro (2013): Assessment of climate change in Europe from an ensemble of regional climate models by the use of Köppen–Trewartha classification. *International Journal of Climatology*, 33, 9, 2157-2166 ([30 citations](#))

AF Carril, CG Menéndez, ARC Remedio, F Robledo, A Sörensson, B Tencer, J-P Boulanger, M de Castro, D Jacob, H Le Treut, L Li, O Penalba, S Pfeifer, M Rusticucci, P Salio, P Samuelsson, E Sanchez, P Zaninelli (2012): Performance of a multi-RCM ensemble for South Eastern South America. *Climate Dynamics*, 39, 12, 2747-2768 ([30 citations](#))

E Zurita, M Castro (1983): A statistical-analysis of mean hourly concentrations of surface ozone at Madrid (Spain). *Atmospheric Environment*, 17, 11, 2213-2220 ([29 citations](#))

C Fernandez, MA Gaertner, C Gallardo, M Castro (1995): Simulation of a long-lived meso- $\beta$  scale convective system over the Mediterranean coast of Spain. Part I: Numerical predictability. *Meteorology and Atmospheric Physics*, 56, 3-4, 157-179 ([26 citations](#))

MA Gaertner, M Castro (1996): A new method for vertical interpolation of the mass field. *Monthly Weather Review*, 124, 7, 1596-1603 ([15 citations](#))

FJ Tapiador, A Navarro, R Moreno, A Jiménez-Alcázar, C Marcos, A Tokay, L Durán, JM Bodoque, R Martín, W Petersen, M de Castro (2017): On the optimal measuring area for

pointwise rainfall estimation: a dedicated experiment with 14 laser disdrometers. *Journal of Hydrometeorology*, 18, 3, 753-760 ([13 citations](#))

FJ Tapiador, AY Hou, M de Castro, R Checa, F Cuartero, AP Barros (2011): Precipitation estimates for hydroelectricity. *Energy & Environmental Science*, 4, 11, 4435-4448 ([12 citations](#))

M de Castro, C Gallardo, S Calabria (2004): Regional IPCC projections until 2100 in the Mediterranean area. In *Environmental Challenges in the Mediterranean 2000-2050*, 37, 75-90. Editor: A. Marquina ([11 citations](#))

FJ Tapiador, CF Angelis, N Viltard, F Cuartero, M de Castro (2011): On the suitability of regional climate models for reconstructing climatologies. *Atmospheric Research*, 101, 3, 739-751 ([10 citations](#))

E Serrano, M Castro, A Macias (1993): An improved direct method of rubber cracking analysis for estimating 24-hour ozone levels. *Atmospheric Environment Part A*, 27, 3, 431-442 ([9 citations](#))

V Gil, MA Gaertner, E Sanchez, C Gallardo, E Hagel, C Tejada, M de Castro (2015): Analysis of interannual variability of sunshine hours and precipitation over Peninsular Spain. *Renewable Energy*, 83, 680-689 ([8 citations](#))

KP Hoinka, MA Gaertner, M de Castro (2007): Iberian thermal lows in a changed climate. *Quarterly Journal of the Royal Meteorological Society*, 133, 626, 1113-1126 ([8 citations](#))

FJ Tapiador, MA Gaertner, R Romera, M Castro (2007): A multisource analysis of Hurricane Vince. *Bulletin of the American Meteorological Society*, 88, 7, 1027-1032 ([8 citations](#))

KP Hoinka, M de Castro (2005): A renaissance depiction of a Tornado. *Bulletin of the American Meteorological Society*, 86, 4, 543-552 ([8 citations](#))

M Castro (1982): Time variations of turbidity parameters in the Madrid atmosphere. *Archives for Meteorology Geophysics and Bioclimatology Series B*, 31, 1-2, 77-85 ([8 citations](#))

C Fernandez, MA Gaertner, C Gallardo, M Castro (1997): Simulation of a long-lived meso- $\beta$  scale convective system over the Mediterranean coast of Spain. Part II: Sensitivity to external forcings. *Meteorology and Atmospheric Physics*, 62, 3-4, 179-200 ([7 citations](#))

Castro, M., Fernandez, C., Gallardo, C., Gaertner, M.A. (1995): Relevance of regional models for analyzing future climate change in the Iberian Peninsula. In *Global Change and Mediterranean type Ecosystems*. Eds. Moreno&Oechel, Springer, ISBN 0-387-94352-8, pgs. 1-34. ([5 citations](#))

FJ Tapiador, A Behrangi, ZS Haddad, D Katsanos, M de Castro (2016): Disruptions in precipitation cycles: Attribution to anthropogenic forcing. *Journal of Geophysical Research: Atmospheres*, 121, 5, 2161-2177 ([4 citations](#))

C Tejada, C Gallardo, M Domínguez, MA Gaertner, C Gutierrez, M de Castro (2018): Using wind velocity estimated from a reanalysis to minimize the variability of aggregated wind farm production over Europe. *Wind Energy*, 21, 3, 174-183 ([3 citations](#))

M de Castro, C Ramis, P Cotarelo, J Riechmann (2007): Cambio climático: un reto social inminente ([3 citations](#))

Castro, M., Fernandez, C., Gaertner, M.A. (1993): Description of a mesoscale atmospheric numerical model. In *Mathematics, Climate and Environment*, Rech. Notes Math. Appl. Ser. Eds. Diaz&Lions, Masson, ISBN 2-225-84297-3, pgs. 230-253. ([3 citations](#))

E Serrano, E Zurita, M Castro (1989): Analysis of the annual trend in SO2 and particulate matter emissions in Madrid (Spain). *Atmospheric Environment*, 23, 3, 631-642 ([2 citations](#))

FJ Tapiador, S Kacimi, M de Castro, V Levizzani, D Katsanos, E García-Ortega (2015): Precipitation science: observations, retrievals, and modeling. *Advances in Meteorology*, 2015

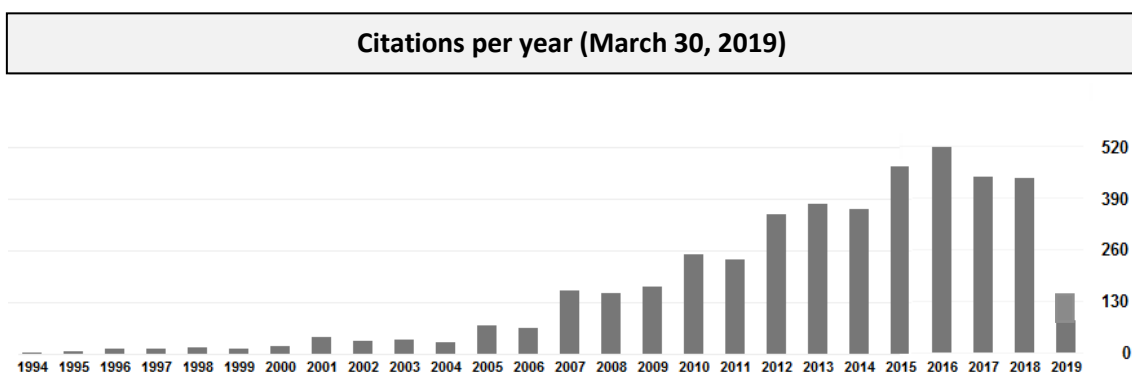
D Katsanos, E García-Ortega, M de Castro, E Arias, FJ Tapiador (2014): High-Resolution, Near Real-Time Simulation of Microwave Radiance Using a Simple Land-Cover Based Emissivity Prior. *Advances in Meteorology*, 2014

C Gallardo, VE Gil, E Hagel, C Tejada, M de Castro, E Sánchez, MA Gaertner (2012): Assessment by the use of the Köppen-Trewartha classification of climate change in Europe throughout the 21st century from an ensemble of regional climate models. *EGU General Assembly Conference Abstracts*, vol 14, pp 5542

E Hagel, VE Gil, C Tejada, M de Castro (2012): Dynamic downscaling of the NCEP EPS forecast using the PROMES limited area model. *Tethys: Journal of Mediterranean Meteorology & Climatology*, 9, 3-12

KP Hoinka, M de Castro, R Steinacker (2008): Artistic depiction of mountain wave clouds: Föhn clouds above Innsbruck. *Weather*, 63, 4, 94-98

B Rodriguez, M de Castro, E Serrano (2000): Winter atmospheric circulation patterns over the North Atlantic area related to precipitation anomalous regime in the Iberian Peninsula. *World Meteorological Organization-Publications-WMO TD*, 364-368



	<b>TOTAL</b>	<b>Since 2014</b>
<b>Citations</b>	<b>4572</b>	<b>2398</b>
<b>h-index</b>	<b>31</b>	<b>21</b>
<b>i10- index</b>	<b>40</b>	<b>30</b>

## Participation in Competitive Scientific Research Projects

### Funded by the European Commission

Title of project: 21st Century Climate: Regionalization

Lead researcher: **Manuel de Castro** (UCM partner)

Reference: EV5V-CT92-0126, FP3

Years: 1993 - 1994

Granted fund: 30.000 €

Title of project: Land surface processes and climate response

Lead researcher: **Manuel de Castro** (UCM partner)

Reference: ENV4-CT95-0112, FP4

Years: 1996 - 1998

Granted fund: 95.000 €

Title of project: Modeling the effect of land degradation on climate (CLD)

Lead researcher: **Manuel de Castro** (UCM partner)

Reference: ENV4-CT97-0696, FP4

Years: 1998 - 2001

Granted fund: 151.298 €

Title of project: Prediction of Regional scenarios and uncertainties for defining European Climate

change risks and effects (PRUDENCE)

Lead researcher: **Manuel de Castro** (UCM partner)

Reference: EVK2-2001-00156, FP5

Years: 2001 - 2004

Granted fund: 210.910 €

Title of project: A Europe-South America network for climate change assessment and impact studies (CLARIS)

Lead researcher: **Manuel de Castro** (UCLM partner)

Reference: GOCE-CT-2003-001454, FP6

Years: 2004 - 2007

Granted fund: 14.181 €

Title of project: Ensemble-based predictions of climate changes and their impacts (ENSEMBLES)

Lead researcher: **Manuel de Castro** (UCLM partner)

Reference: GOCE-CT-2003-505539, FP6

Years: 2004 - 2009

Granted fund: 155.197 €

Title of project: Meso-meteorological cycles of air pollutants in the Iberian Peninsula (MECAPIP)

Lead researcher: M. Millán Muñoz (CIEMAT partner)

Reference: EV4V-0097-E, FP2

Years: 1990 - 1992

Granted fund: 120.000 €



Title of project: African Monsoon Multidisciplinary Analysis (AMMA)  
Lead researcher: Miguel Angel Gaertner (UCLM partner)  
Reference: GOCE-004089, FP6  
Years: 2005 - 2009  
Granted fund: 102.272 €

Title of project: A Europe-South America Network for Climate Change Assessment and Impact Studies (CLARIS-LPB)  
Lead researcher: Enrique Sánchez (UCLM partner)  
Reference: GOCE-212492, FP7  
Years: 2008 - 2012  
Granted fund: 69.137 €

Title of project: DownScaling CLImate ImPACTs and decarbonisation pathways in EU islands, and enhancing socioeconomic and non-market evaluation of Climate Change for Europe, for 2050 and Beyond (SOCLIMPACT)  
Lead researcher: Miguel Angel Gaertner (UCLM partner)  
Reference: Grant Agreement No. 776661, FP-H2020  
Years: 2017 - 2020  
Granted fund: 206.086 €

### **Funded by the Spanish Ministry of Education and Science**

Title of project: Ciclos meso-meteorológicos de contaminantes atmosféricos en la Península Ibérica  
Lead researcher: **Manuel de Castro**  
Reference: PB89-0086  
Years: 1990 - 1992  
Granted fund: 800.000 pts

Title of project: Evolución climática para el suroeste de Europa (ECLIPSE)  
Lead researcher: **Manuel de Castro** (UCM partner)  
Reference: NAT-91-0222-C04-02  
Years: 1992 - 1995  
Granted fund: 1.350.000 pts

Title of project: Evolución climática regional en la Península Ibérica (ECLIMAR)  
Lead researcher: **Manuel de Castro** (UCM partner)  
Reference: CLI95-1818-CO2-O2  
Years: 1996 - 1998  
Granted fund: 902.000 pts

Title of project: Generación de escenarios regionales de clima futuro y su aplicación para estudios de impacto en la Península Ibérica (GERCLIMPE)  
Lead researcher: **Manuel de Castro** (UCLM partner)  
Reference: REN2000-0769-CO2-01  
Years: 2001 - 2004  
Granted fund: 210.910 €

Title of project: Escenarios de cambio climático regionalizado para el análisis de estrategias de mitigación y adaptación a escala nacional y regional.

Lead researcher: **Manuel de Castro**

Reference: InnoCampus PEID-3 (Infrastructure)

Years: 2011 - 2013

Granted fund: 135.500 €

Title of project: Acoplamiento del modelo avanzado de vegetación con evaluación de caudales fluviales ORCHIDEE al modelo climático regional PROMES

Lead researcher: Miguel Angel Gaertner

Reference: . REN2003-00411/CLI

Years: 2003 - 2007

Granted fund: 117.000 €

Title of project: Desarrollo de un modelo regional de clima con acoplamiento atmósfera-océano y

optimización del código para computadores masivamente paralelos (MERCATOP)

Lead researcher: Clemente Gallardo (UCLM partner)

Reference: CGL2007-66440-C04-02

Years: 2007 - 2011

Granted fund: 94.700 €

Title of project: Simulador de la constelación de satélites de la Global Precipitation Measurement Mission GPM

Lead researcher: Francisco Javier Tapiador

Reference: CGL2010-20787-C02-1

Years: 2011 - 2013

Granted fund: 117.370 €

Title of project: Análisis del riesgo de ciclones tropicales y de transiciones extratropicales intensas

en el Atlántico Nororiental y el Mediterráneo en escenarios de cambio climático

Lead researcher: Miguel Angel Gaertner

Reference: CGL2010-18013/CLI

Years: 2011 - 2014

Granted fund: 105.000 €

Title of project: Instrumentación para campañas de medida del proyecto GPM de la NASA

Lead researcher: Francisco Javier Tapiador

Reference: UNCM13-1E-2022 (Infrastructure)

Years: 2013 - 2015

Granted fund: 704.169 €

Title of project: Algoritmos de precipitación para la misión GPM de la NASA

Lead researcher: Francisco Javier Tapiador

Reference: CGL2013-48367-P

Years: 2014 - 2016

Granted fund: 111.320 €

Title of project: Ciclones con características tropicales en regiones marinas en torno a la Península Ibérica: Estudio en clima actual y futuro mediante modelos climáticos y métodos avanzados (IBERTROPIC)  
Lead researcher: Miguel Angel Gaertner (UCLM partner)  
Reference: CGL2017-89583-R  
Years: 2018 - 2020  
Granted fund: 145.200 €

Title of project: Modelización avanzada para el análisis de riesgos hidroclimáticos en escenarios regionalizados de cambio climático  
Lead researcher: Miguel Angel Gaertner (UCLM partner)  
Reference: CGL2013-47261-R  
Years: 2014 - 2017  
Granted fund: 161.000 €

Title of project: Medidas multifuente de precipitación en 4D para mejorar la cuantificación precisa de los cambios en el ciclo hidrológico en el marco de la misión GPM de la NASA  
Lead researcher: Francisco Javier Tapiador  
Reference: CGL2016-80609-R  
Years: 2016 - 2019  
Granted fund: 84.700 €

#### **Funded by Spanish Regional Governments Research Councils**

Title of project: Simulación de flujos atmosféricos en la región de Madrid (SIFAM)  
Lead researcher: **Manuel de Castro** (UCM)  
Reference: CAM C156/90  
Years: 1990 – 1992  
Granted fund: 1.200.000 pts

Title of project: Generación de escenarios probabilísticos de impacto y adaptación al cambio climático en la agricultura de la zona centro de la Península, v. 2  
Lead researcher: **Manuel de Castro**  
Reference: JCCM PEII10-0248-5680  
Years: 2010 – 2013  
Granted fund: 102.185 €

Title of project: Desarrollo de nuevos métodos de estimación de precipitación y recursos hídricos  
Lead researcher: Francisco Javier Tapiador  
Reference: . JCCM PAI06-0102-7466  
Years: 2006 - 2008  
Granted fund: 51.350 €

Title of project: Escenarios de cambio climático para Castilla-La Mancha: efectos atmosféricos y generación de bases de datos adaptadas para los sectores afectados  
Lead researcher: Enrique Sánchez (UCLM)  
Reference: JCCM  
Years: 2010 - 2013  
Granted fund: 80.000 €

### **Research Contracts funded by public entities or private companies**

Title of project: Análisis de vientos en terrenos complejos (Proyecto CASSANDRA)

Main responsible: **Manuel de Castro**

Entity/Company: GAMESA CORPORACION TECNOLOGICA, SA

Period: 2002 - 2004

Granted fund: 327.555 €

Title of project: Asesoramiento, asistencia y actualización del modelo PROMES para la predicción

eólica

Main responsible: **Manuel de Castro**

Entity/Company: GAMESA CORPORACION TECNOLOGICA, SA

Period: 2004 - 2006

Granted fund: 151.800 €

Title of project: Mejora de las predicciones eólicas diarias con el modelo meteorológico PROMES

Main responsible: **Manuel de Castro**

Entity/Company: GAMESA CORPORACION TECNOLOGICA, SA

Period: 2006 - 2007

Granted fund: 45.000 €

Title of project: Generación de Escenarios Regionalizados de Cambio Climático en España

Main responsible: **Manuel de Castro**

Entity/Company: Instituto Nacional de Meteorología (INM)

Period: 2006

Granted fund: 12.000 €

Title of project: Optimización de los tratamientos preventivos de vialidad invernal

Main responsible: **Manuel de Castro**

Entity/Company: Asociación de Empresas de Conservación y Explotación de Infraestructuras (ACEX)

Period: 2006 - 2008

Granted fund: 86.500 €

Title of project: Agencia Meteorológica Regional de la Comunidad Autónoma de Castilla La Mancha

Main responsible: **Manuel de Castro**

Entity/Company: Consejería de Medio Ambiente. Junta de Comunidades de Castilla-La Mancha

Period: 2007 - 2008

Granted fund: 150.000 €

Title of project: Generación de escenarios regionalizados de cambio climático en España con modelos de alta resolución (ESCENA)

Main responsible: **Manuel de Castro**

Entity/Company: Ministerio de Medio Ambiente (ref. 200800050084265)

Period: 2008 - 2012

Granted fund: 215.012 €

Title of project: Evaluación de recurso eólico offshore  
Main responsible: **Manuel de Castro**  
Entity/Company: GAMESA CORPORACION TECNOLOGICA, SA  
Period: 2010 - 2011  
Granted fund: 32.000 €

Title of project: Elaboración de mapas de recurso eólico en Castilla-La Mancha  
Main responsible: **Manuel de Castro**  
Entity/Company: AGE CAM  
Period: 2010 - 2011  
Granted fund: 24.000 €

Title of project: Elaboración de mapas de insolación en Castilla-La Mancha a partir de imágenes de satélite  
Main responsible: **Manuel de Castro**  
Entity/Company: AGE CAM  
Period: 2010 - 2011  
Granted fund: 60.000 €

Title of project: IMPACTO Y ADAPTACIÓN DE SISTEMAS AGRÍCOLAS DEL PAÍS VASCO AL CAMBIO CLIMÁTICO  
Main responsible: **Manuel de Castro**  
Entity/Company: Neiker – Instituto Vasco de Investigación y Desarrollo Agrario  
Period: 2010 - 2011  
Granted fund: 42.418 €

Title of project: Análisis del recurso eólico en Castilla-La Mancha con muy alta resolución  
Main responsible: **Manuel de Castro**  
Entity/Company: AGE CAM  
Period: 2011 - 2012  
Granted fund: 21.000 €

Title of project: Estudio eólico de zonas off-shore  
Main responsible: **Manuel de Castro**  
Entity/Company: GAMESA CORPORACION TECNOLOGICA, SA  
Period: 2012  
Granted fund: 4.000 €

Title of project: Asistencia técnica para los estudios meteorológico e hidrológico del emplazamiento del ATC de Villar de Cañas  
Main responsible: **Manuel de Castro**  
Entity/Company: AITEMIN  
Period: 2012 - 2013  
Granted fund: 14.000 €

Title of project: Proyecto de predicción de nieblas para plantas solares  
Main responsible: **Manuel de Castro**  
Entity/Company: HELIOS - HYPERION ENERGY INVESTMENT SL  
Period: 2014 - 2017  
Granted fund: 73.786 €

Title of project: Tecnologías para el combate integral contra incendios forestales - Cenit Prometeo.

Main responsible: Francisco J. Tapiador

Entity/Company: TELVENT ENVIRONMENT, SA

Period: 2010 - 2012

Granted fund: 118.000 €

### **Patent/Industrial & Intellectual property rights**

Title: AGROCLIMA-SSP v.1.1 (Computer code)

Inventors/authors: Minguez, MI; Ruiz, M; Rodríguez, A; Castro, M; Domínguez, M; Gaertner, MA; Gallardo, C; Sánchez, E; del Valle, D; Sánchez, E; Pérez, A

Titular Entity of Rights: Universidad Politécnica de Madrid, Universidad de Castilla-La Mancha

Date of concession: 23/07/2012

Country: Spain

### **PhD Thesis Direction**

PhD Thesis title: Desarrollo de un método para la estimación de concentraciones diarias de ozono en la baja atmósfera, basado en el agrietamiento del caucho

Doctorand: Encarnación Serrano Mendoza

University: Complutense de Madrid

Faculty / School: Facultad de Ciencias Físicas

Presentation year: 1989

PhD Thesis title: Desarrollo y aplicación de un modelo bidimensional para la simulación numérica de la atmósfera a mesoscala

Doctorand: Casimiro Fernández Galvín

University: Complutense de Madrid

Faculty / School: Facultad de Ciencias Físicas

Presentation year: 1992

PhD Thesis title: Modelo lagrangiano de difusión de partículas por el método Monte Carlo

Doctorand: Rosa M<sup>a</sup> González Barras

University: Complutense de Madrid

Faculty / School: Facultad de Ciencias Físicas

Presentation year: 1993

PhD Thesis title: Climatología sinóptica de las depresiones térmicas en la Península Ibérica

Doctorand: Adelaida Portela Lozano

University: Complutense de Madrid

Faculty / School: Facultad de Ciencias Físicas

Presentation year: 1994

PhD Thesis title: Aplicacion de un modelo de predicción meteorológica a la simulación de flujos atmosféricos a mersoscala en la zona centro de la Península Ibérica  
Doctorand: Miguel Angel Gaertner Ruiz-Valdepeñas  
University: Complutense de Madrid  
Faculty / School: Facultad de Ciencias Físicas  
Presentation year: 1994

PhD Thesis title: Desarrollo y verificación de un modelo regional de clima para su aplicación en la Península Ibérica  
Doctorand: Clemente Gallardo Andrés  
University: Complutense de Madrid  
Faculty / School: Facultad de Ciencias Físicas  
Presentation year: 1998

PhD Thesis title:Desarrollo de un modelo de viento de diagnóstico conservativo para aplicaciones relacionadas con el aprovechamiento de la energía eólica  
Doctorand: Jorge González Olalla  
University: Complutense de Madrid  
Faculty / School: Facultad de Ciencias Físicas  
Presentation year: 2000

PhD Thesis title: Respuesta del clima regional a perturbaciones de la cubierta vegetal en el área mediterránea occidental: Aplicación de un modelo numérico de clima  
Doctorand: Juan A. Prego Ortíz  
University: Complutense de Madrid  
Faculty / School: Facultad de Ciencias Físicas  
Presentation year: 2000

PhD Thesis title: Sensibilidad del clima de la Península Ibérica a una degradación de los suelos  
Doctorand: Alberto Arribas Herranz  
University: Complutense de Madrid  
Faculty / School: Facultad de Ciencias Físicas  
Presentation year: 2002

PhD Thesis title: Caracterización del régimen de vientos y desarrollo de un modelo de predicción eólica a escala local en el Estrecho de Gibraltar  
Doctorand: Ana M. Palomares Losada  
University: Complutense de Madrid  
Faculty / School: Facultad de Ciencias Físicas  
Presentation year: 2002

PhD Thesis title: Simulación de la contaminación por ozono en Sao Paulo (Brasil) mediante un modelo fotoquímico y análisis de su potencial aplicación en estrategias de control de emisiones  
Doctorand: Marta García Vivanco  
University: Complutense de Madrid  
Faculty / School: Facultad de Ciencias Físicas  
Presentation year: 2004

PhD Thesis title:

Doctorand: Teresa Rico de Amo

University: Complutense de Madrid

Faculty / School: Facultad de Ciencias Físicas

Presentation year: 2015