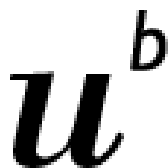


Curriculum Vitae

Juan José Gómez Navarro

Physics Institute and Oeschger Centre
for Climate Change Research
University of Bern



b
**UNIVERSITÄT
BERN**

October 2013

PERSONAL DATA

- **Family and forename:** Gómez Navarro, Juan José
- **Gender:** Male
- **Marital status:** Married
- **Birth:**
 - Place: Albacete (Spain)
 - Date: 12/03/1982
 - Nationality: Spanish
- **Permanent address:**
 - City: Santomera (Murcia)
 - Address: Grupo de Coros y Danzas, 3 Bajo b
 - Zip code: 30140
 - Phone +34 868 810 985

ACADEMIC BACKGROUND

- PhD. in Science. University of Murcia, 2011
- Master in Quantitative Finance. Analistas Financieros Internacionales (AFI) (Madrid), 2007
- Pre-doctoral courses. Autonomous University of Madrid, 2007
- B. S. degree in Physics. University of Murcia, 2000–2005

PROFESSIONAL EXPERIENCE

- **Postdoc research contract.** Physics Institute and Oeschger Centre for Climate Change Research, University of Bern. from **10-2013** until **currently**
- **Postdoc research contract.** Department of Palaeoclimate, Helmholtz-Zentrum Geesthacht. from **05-2012** until **09-2013**
- **Postdoc research contract.** Department of Physics of the University of Murcia. from **10-2011** until **04-2011**
- **PhD research contract.** Department of Physics of the University of Murcia. from **09-2007** until **09-2011**
- **Administrative assistant.** Department of Global Risk Management. Cajamurcia. from **07-2008** until **09-2008**

LANGUAGES

| Language | Speaking | Reading | Writing |
|----------------|----------|----------|----------|
| Spanish | Excelent | Excelent | Excelent |
| English | Good | Excelent | Excelent |
| German | Basic | Basic | Basic |

PARTICIPATION IN RESEARCH PROJECTS AND CONTRACTS

- **Title:** *PRecipitation In past Millennia in Europe-extension back to Roman times (PRIME-2K)*
Participant institutions: Helmholtz-Zentrum Geesthacht, Justus-Liebig University
Principal Investigator: Jürg Luterbacher and Eduardo Zorita
Funding agency: DFG-Schwerpunktprogramm INTERDYNAMIK
Code: LK14302KSP5002
Amount: –
Number of researchers: 4
Duration from 2012 until 2014
- **Title:** *Simulation and analysis of key periods of the late Quaternary: advance in the understanding of climate modeling and reconstructions*
Participant institutions: Complutense University of Madrid, University of Murcia
Principal Investigator: Volker Rath
Funding agency: Spanish Ministry of Science and Innovation
Code: CGL2011-29672-C02-01
Amount: 150000 euros
Number of researchers: 10
Duration from January 2011 until December 2014
 - SUBPROJECT:
Title: *Regional simulations*
Participant institutions: University of Murcia
Principal Investigator: Juan Pedro Montávez Gómez
Code: CGL2011-29672-C02-02
Amount: 92000 euros
Number of researchers: 5
- **Title:** *Regional ensemble climate simulations over the Iberian Peninsula and impacts on air quality*
Participant institutions: UMU
Principal Investigator: Pedro Jiménez Guerrero
Funding agency: Seneca Foundation
Code: 12033/PI/09
Amount: 34900
Number of researchers: 5
Duration from 1-1-2010 until 31-12-2011
- **Title:** *Simulation and analysis of key periods of the Quaternary: climatic modeling and reconstruction*
Participant institutions: Complutense University of Madrid, University of Murcia
Principal Investigator: Jesús Fidel González Rouco
Funding agency: Spanish Ministry of Science and Innovation
Code: CGL2008-06558-C02-01/CLI
Amount: 80000
Number of researchers: 10
Duration from 2008 until 2011
 - SUBPROJECT:
Title: *Regional integrations*
Participant institutions: University of Murcia

Principal Investigator: Juan Pedro Montávez Gómez
Code: CGL2008-06558-C02-02/CLI
Amount: 30000
Number of researchers: 5

- **Title:** *Generation of regional scenarios of climate change in Spain by using high-resolution models (ESCENA)*

Participant institutions: UCLM, UMU, UC, USC
Principal Investigator: Manuel Castro Muñoz de Lucas
Funding agency: Spanish Ministry of the Environment
Code: –
Amount: 703.829,60
Number of researchers: 16
Duration from 12-2008 until 12-2011

- SUBPROJECT:

Title: *Integrations with MM5*
Participant institutions: UM
Principal Investigator: Juan Pedro Montávez Gómez
Code: –
Amount: 155.925,60
Number of researchers: 5

- **Title:** *Characterization of the climate of the Iberian Peninsula during the period 1750-1850*

Participant institutions: UCM, UMU, UAL, UZA, UEX, PCB, UVI, UPO
Principal Investigator: Ricardo García Herrera
Funding agency: Spanish Ministry of the Environment
Code: –
Amount: 393.072
Number of researchers: 40
Duration from 12-2008 until 12-2011

- SUBPROJECT:

Title: *Regional Paleosimulations*
Participant institutions: University of Murcia
Principal Investigator: Juan Pedro Montávez Gómez
Code: –
Amount: 67.460
Number of researchers: 5

- **Title:** *"Small wind turbines" project: promotion of the small power eolic technology*
Participant institutions: CIEMAT, UM, CENER and a number of companies in this sector

Principal Investigator: Jose Ignacio Cruz Cruz
Funding agency: Spanish Ministry of Education and Science
Code: PSE.120000.2007.14
Amount: 1475983
Number of researchers: 50
Duration from 2007 until 2010

- SUBPROJECT:

Title: *Development of a wind map at national level adopted for small wind turbines (EOLMAP)*

Participant institutions: University de Murcia, CIEMAT y CENER

Principal Investigator: Juan Pedro Montávez

Code: PSS-120000-2007-71

Amount: 97800

Number of researchers: 10

PUBLICATIONS

International Journals

Submitted papers

- J.J. Gómez-navarro, J. Werner, S. Wagner, J. Luterbacher, E. Zorita: *Establishing the skill of climate field reconstruction techniques for precipitation with pseudoproxy experiments*. Climate Dynamics, 2014
- R. Lorente-Plazas, J.P. Montávez, S. Jerez, J.J. Gómez-navarro, P. Jiménez-Guerrero, P.A. Jiménez: *A 49 years hindcast of surface winds over the Iberian Peninsula*. International Journal of Climatology, 2014

Published papers

- R. Lorente-Plazas, J.P. Montávez, P.A. Jiménez, S. Jerez, J.J. Gómez-navarro, J.A. García-Valero, P. Jiménez-Guerrero: *Characterization of surface winds over the Iberian Peninsula*. International Journal of Climatology, , pp , **doi:10.1002/joc.4034**, 2014
- P. Jimenez-Guerrero, J.J. Gómez-Navarro, R. Baró, R. Lorente, N. Ratola, J.P. Montávez: *Is there a common pattern of future gas-phase air pollution in Europe under diverse climate change scenarios?*. Climatic Change, **121**, pp 661–671, **doi:10.1007/s10584-013-0944-8**, 2013
- J.J. Gómez-Navarro, J.P. Montávez, S. Wagner, E. Zorita: *A regional climate palaeosimulation for Europe in the period 1500-1990. Part I: model validation*. Climate of the Past, **9**, pp 1667-1682, **doi:10.5194/cp-9-1667-2013**, 2013
- J.J. Gómez-Navarro, E. Zorita: *Atmospheric annular modes in simulations over the past millennium: No long-term response to external forcing*. Geophysical Research Letters, **40**, pp XX, **doi:10.1002/grl.50628**, 2013
- J.J. Gómez-Navarro, J.P. Montávez, S. Jerez, P. Jiménez-Guerrero, E. Zorita: *What is the role of the observational dataset in the validation and scoring of climate models?*. Geophysical Research Letters, **39**, pp L24701, **doi:10.1029/2012GL054206**, 2012
- J.A. García-Valero, J.P. Montávez, S. Jerez, J.J. Gómez-Navarro, R. Lorente-Plazas, P. Jiménez-Guerrero: *A seasonal study of the atmospheric dynamics over the Iberian Peninsula based on Circulation Types*. Theoretical and Applied Climatology, **110**, pp 291-310, **doi:10.1007/s00704-012-0623-0**, 2012

- S. Jerez, J.P. Montávez, J.J. Gómez-Navarro, P. Jiménez-Guerrero, P.A. Jimenez, R. Lorente-Plazas, J.F. González-Rouco: *The role of the land-surface model for climate change projections over the Iberian Peninsula*. Journal of Geophysical Research, **117**, pp D01109, doi:10.1029/2011JD016576, 2012
- P. Jiménez-Guerrero, J.P. Montávez, J.J. Gómez-Navarro, S. Jerez, R. Lorente-Plazas: *Impacts of climate change on gas-phase pollutants and aerosols in the Iberian Peninsula for the late XXI century*. Atmospheric Environment, **55**, pp 483-495, doi:10.1016/j.atmosenv.2012.02.2012
- S. Jerez, J.P. Montávez, J.J. Gómez-Navarro, R. Lorente-Plazas, J.A. García-Valero, P. Jiménez-Guerrero: *A multi-physics ensemble of regional climate change projections over the Iberian Peninsula*. Climate Dynamics, **XX**, pp YYYY, doi:10.1007/s00382-012-1551-5, 2012
- S. Jerez, J.P. Montávez, P. Jiménez-Guerrero, J.J. Gómez-Navarro, R. Lorente-Plazas, E. Zorita: *A multi-physics ensemble of present-day climate regional simulations over the Iberian Peninsula*. Climate Dynamics, **40**, pp 3023-3046, doi:10.1007/s00382-012-1539-1, 2013
- I. Dorado-Liñán, U. Buntgen, J.F. González-Rouco, E. Zorita, J.P. Montávez, J.J. Gómez-Navarro, M. Brunet, I. Heinrich, G. Helle, and E. Gutiérrez: *Estimating 750 years of temperature variations and uncertainties in the Pyrenees by tree-ring reconstructions and climate simulations*. Climate of the Past, **8**, pp 919-933, doi:10.5194/cp-8-919-2012, 2012
- F.S. Rodrigo, J.J. Gómez-Navarro, J.P. Montávez: *Climate variability in Andalusia (southern Spain) during the period 1701–1850 AD from documentary sources: evaluation and comparison with climate model simulations*. Climate of the Past, **8**, pp 117-133, doi:10.5194/cp-8-117-2012, 2012
- J.J. Gómez-Navarro, J.P. Montávez, P. Jiménez-Guerrero, S. Jerez-Rodríguez, R. Lorente-Plazas, J.F. González-Rouco, E. Zorita: *Internal and external variability in regional simulations of the Iberian Peninsula climate over the last millennium*. Climate of the Past, **8**, pp 25-36, doi:10.5194/cp-8-25-2012, 2012
- P. Jiménez-Guerrero, O. Jorba, T. M. Pay, J. P. Montávez, S. Jerez, J. J. Gómez-Navarro, J. M. Baldasano: *Comparison of two different sea-salt aerosol schemes as implemented in air quality models applied to the Mediterranean Basin*. Atmospheric Chemistry and Physics, **11**, pp 4833-4850, doi:10.5194/acp-11-4833-2011, 2011
- P. Jiménez-Guerrero, J.J. Gómez-Navarro, S. Jerez, R. Lorente-Plazas, J.A. Garcia-Valero, J.P. Montávez: *Isolating the effects of climate change in the variation of secondary inorganic aerosols (SIA) in Europe for the 21st century (1991-2100)*. Atmospheric Environment, **45**, pp 1059-1063, doi:10.1016/j.atmosenv.2010.11.022, 2011
- J.J. Gómez-Navarro, J.P. Montávez, S. Jerez, P. Jiménez-Guerrero, R. Lorente-Plazas, J.F. González-Rouco and E. Zorita: *A regional climate simulation over the Iberian Peninsula for the last millennium*. Climate of the Past, **7**, pp 451-472, doi:10.5194/cp-7-451-2011, 2011
- S. Jerez, J.P. Montávez, J.J. Gómez-Navarro, P. Jiménez-Guerrero, J.M. Jiménez, J.F. González-Rouco: *Temperature sensitivity to the land-surface model in MM5 climate simulations over the Iberian Peninsula*. Meteorologische Zeitschrift, **19**, pp 363-374, doi:10.1127/0941-2948/2010/0473, 2010

- J.J. Gómez-Navarro, J.P. Montávez, P. Jiménez-Guerrero, S. Jerez, J.A. García-Valero, J.F. González-Rouco: *Warming patterns in regional climate change projections over the Iberian Peninsula*. Meteorologische Zeitschrift, **19**, pp 275-285, doi:10.1127/0941-2948/2010/0351, 2010

■ Book Chapters

- J.J. Gómez-Navarro, J.P. Werner, S. Wagner, E. Zorita, J. Luterbacher: Chapter 22. Precipitation in the Past Millennium in Europe–Extension to Roman Times. In *Integrated Analysis of Interglacial Climate Dynamics (INTERDYNAMIC)*., pp. XXX. Michael Schulz and Andre Paul (Ed.). SpringerBriefs in Earth System, 2014. ISBN 978-3-319-00692-5.
- P. Jiménez-Guerrero, S. Jerez, J.J. Gómez-Navarro, R. Lorente, J.P. Montávez: Chapter Future Air Pollution in Europe from a Multi-physics Ensemble of Climate Change-Air Quality Projections. In *Air Pollution Modeling and its Application XXII.*, pp. pp. 3–7. D.G. Steyn, P.J.H. Builtjes and R.M.A. Timmermans (Ed.). Springer Netherlands, 2014. ISBN 978-94-007-5576-5.
- J.P. Montávez, S. Jerez, J.J. Gómez-Navarro, J.A. García-Valero y P. Jiménez-Guerrero: Chapter 2.2. Incertidumbres en las proyecciones de cambio climático. In *Cambio Climático en la Región de Murcia.*, pp. 39–45. Francisco Victoria Jumilla (Ed.). Ediciones de la Consejería de Agricultura y Agua, 2010. ISBN 978-84-693-8114-4.
- J.P. Montávez, S. Jerez, J.J. Gómez-Navarro, J.A. García-Valero: Chapter 2.3 Cambio climático y energía. In *Sostenibilidad ambiental en la Región de Murcia.*, pp. 188–220. Julia Martínez y Miguel Angel Esteve (Ed.). Servicio de Publicaciones de la Universidad de Murcia, 2009. ISBN 978-84-8371-915-2.

■ Other publications

- J.J. Gómez-Navarro, M. Messmer and C. Raible: *Simulating historical wind storms in Switzerland with WRF: identification of the optimal setup and its performance in high-resolution simulations*. Proceedings of the 3rd International Lund Regional-Scale Climate Modelling Workshop, pp. 105–106. Lars Bärring, Marcus Reckermann, Burkhardt Rockel and Markku Rummukainen (Ed.) International Baltic Earth Secretariat Publicacions. Lund, Sweden, 2014. ISSN 2198-4247
- M. Messmer, J.J. Gómez-Navarro and C. Raible: *Using WRF to analyse the role of Vb-events in extreme precipitations over Central Europe*. Proceedings of the 3rd International Lund Regional-Scale Climate Modelling Workshop, pp. 255–256. Lars Bärring, Marcus Reckermann, Burkhardt Rockel and Markku Rummukainen (Ed.) International Baltic Earth Secretariat Publicacions. Lund, Sweden, 2014. ISSN 2198-4247
- J.A. García-Valero, J.J. Gómez-Navarro, J.P. Montávez, P. Jiménez-Guerrero, R. Lorente-Plazas, J.F. González-Rouco, E. Zorita: *Influencia de los forzamientos en los tipos de circulación sobre la Península Ibérica en el último milenio*. Cambio climático. Extremos e impactos. VIII Congreso de la Asociación Española de Climatología, pp. 93–104. Concepción Rodríguez Puebla, Antonio Ceballos Barbancho, Nube González Reviriego, Enrique Morán Tejeda y Ascensión Hernández Encinas (Ed.) Publicaciones de la Asociación Española de Climatología. Salamanca, 998 pp., 2012. ISBN 978-84-695-4331-3
- J.P. Montávez, J.J. Gómez-Navarro, S. Jerez, R. Baró, R. Lorente-Plazas, J.A. García-Valero P. Jiménez-Guerrero: *Análisis del papel de la elección de la base de datos reticular observacional en la evaluación de modelos climáticos regionales*. Cambio climático. Extremos e impactos. VIII Congreso de la Asociación Española de Climatología, pp. 153–164.

Concepción Rodríguez Puebla, Antonio Ceballos Barbancho, Nube González Reviriego, Enrique Morán Tejeda y Ascensión Hernández Encinas (Ed.) Publicaciones de la Asociación Española de Climatología. Salamanca, 998 pp., 2012. ISBN 978-84-695-4331-3

- R. Lorente-Plazas, J.P. Montávez, S. Jerez, J. J. Gómez Navarro, P. Jiménez Guerrero, P. A. Jiménez, J.A. García-Valero, F. Gomáriz-Castillo, F. Alonso-Sarría: *EOLMAP: A web tool to assess the wind resource over Spain*. Interantional conference on renewable energies an power quality (ICREPQ' 12), Renewable Energy & Power Quality Journal RE & PQJ. 10. (Ed.) . , 2012. ISSN 2172-038X
- J.J. Gómez-Navarro, J.P. Montávez, S. Jerez, P. Jiménez-Guerrero, R. Lorente-Plazas: *Re-construcciones paleoclimáticas de la Península Ibérica desde una perspectiva de modelización*. Clima, Ciudad y Ecosistemas, VII Congreso de la Asociación Española de Climatología, pp. 95–105. Felipe Fernández García, Encarna Galián Gallego y Rosa Cañada Torrecilla (Ed.) Publicaciones de la Asociación Española de Climatología. Ediciones del Serbal, 586 pp., 2010. ISBN 978-84-7628-658-6
- S. Jerez, J.P. Montávez, J.J. Gómez-Navarro, P. Jiménez-Guerrero, R. Lorente-Plazas: *Análisis de extremos de temperatura en un conjunto de proyecciones de cambio climático*. Clima, Ciudad y Ecosistemas, VII Congreso de la Asociación Española de Climatología, pp. 139–150. Felipe Fernández García, Encarna Galián Gallego y Rosa Cañada Torrecilla (Ed.) Publicaciones de la Asociación Española de Climatología. Ediciones del Serbal, 586 pp., 2010. ISBN 978-84-7628-658-6
- P. Jimenez-Guerrero, S. Jerez, J.J. Gómez-Navarro, R. Lorente, J.A. García-Valero and J.P. Montavez: *Impacts of climate change on air quality levels in southwestern Europe for the 21st century*. 13th International Conference on Harmonisation within Atmospheric Dispersion Modelling for Regulatory Purposes, pp. 327–331. Armand Albergel (Ed.) ARIA Technologies. Paris, France, 2010. ISBN 2-8681-5062-4
- Jerez, S., J.P. Montávez, P. Jiménez-Guerrero, J.J. Gómez-Navarro and J.F. González-Rouco: *Influence of soil moisture-near surface temperature feedback on present and future climate simulations over the Iberian Peninsula*. Proceedings of the 2nd International Lund RCM Workshop: 21th Century Challenges in Regional-scale Climate Modelling, pp. 261–262. Burkhardt Rockel, Lars Bärring y Marcus Reckermann (Ed.) International BALTEX Secretariat Publications. Lund, Sweeden, 2009. ISSN 1681-6471
- J.J. Gómez-Navarro, J.P. Montávez, S. Jerez and P. Jiménez-Guerrero: *Climate change projections for the XXI century over the Iberian Peninsula using dynamical downscaling*. Proceedings of the 2nd International Lund RCM Workshop: 21th Century Challenges in Regional-scale Climate Modelling, pp. 25–26. Burkhardt Rockel, Lars Bärring y Marcus Reckermann (Ed.) Editorial of the University of Lund. International BALTEX Secretariat Publications, 2009. ISSN 1681-6471
- P. Jiménez-Guerrero, S. Jerez, J.P. Montávez, J.J. Gómez-Navarro, J.A. García-Valero and J.F. González-Rouco: *Regional climate change projections using a physics ensemble over the Iberian Peninsula*. Proceedings of the 2nd International Lund RCM Workshop: 21th Century Challenges in Regional-scale Climate Modelling, pp. 130–131. Burkhardt Rockel, Lars Bärring y Marcus Reckermann (Ed.) Editorial of the University of Lund. International BALTEX Secretariat Publications, 2009. ISSN 1681-6471

PARTICIPATION IN RESEARCH CONTRACTS OF SPECIAL RELEVANCE WITH COMPANIES AND/OR PRIVATE OR PUBLIC FUNDING BODIES

- **Title:** *Technical support for the development of an emission inventarium in the Region of Murcia*
Participant institutions: TRAGSATEC, UMU
Principal Investigator: Juan Pedro Montávez Gómez
Funding agency: TRAGSATEC S.A.
Code: UMU-XXXX
Amount: 11341
Number of researchers:
Duration from 29/09/2010 until 15/01/2011
- **Title:** *Generation of pseudoreal data bases using regional circulation models*
Participant institutions: TRAGSATEC, UMU
Principal Investigator: Juan Pedro Montávez Gómez
Funding agency: TRAGSATEC S.A.
Code: UMU-13139
Amount: 11341
Number of researchers:
Duration from 22/02/2010 until 22/06/2010
- **Title:** *Generation of pseudoreal data bases using regional circulation models*
Participant institutions: TRAGSATEC, UMU
Principal Investigator: Juan Pedro Montávez Gómez
Funding agency: TRAGSATEC S.A.
Code: UMU-12761
Amount: 7341
Number of researchers:
Duration from 01/11/2009 until 01/01/2010
- **Title:** *Extreme climatic events in the Iberian Peninsula: high-resolution simulations and future projections*
Participant institutions: UM, IEA
Principal Investigator: Juan Pedro Montávez Gómez
Funding agency: Euromediterranean Institute for Water Research (IEA) - Foundation
Code: –
Amount: 23400
Number of researchers: 5
Duration from 25/12/2009 until 31/12/2010
- **Title:** *Generation of pseudoreal data bases using regional circulation models*
Participant institutions: UMU, Global Forecasters
Principal Investigator: Juan Pedro Montávez Gómez
Funding agency: Global Forecasters
Code: UMU-12199
Amount: 25000
Number of researchers:
Duration from 15/04/2009 until 15/04/2010
- **Title:** *Implementation and Aplication of the EC-EARTH model to improve the seasonal and decadal climatic forecast*
Participant institutions: UMU, BSC
Principal Investigator: Juan Pedro Montávez Gómez
Funding agency: Barcelona Supercomputing Centre
Code: UM-12752

Amount: 30360

Number of researchers:

Duration from 01/12/2009 until 31/12/2012

- **Title:** *Generation of high-resolution climate change projections for the southeastern Iberian Peninsula*

Participant institutions: University of Murcia

Principal Investigator: Juan Pedro Montávez Gómez

Funding agency: Euromediterranean Institute for Water Research (IEA) - Foundation

Code: UM-5381

Amount: 22000

Number of researchers: 4

Duration from 2008 until 2009

- **Title:** *Generation of a high-resolution data base of climate change projections for several meteorological and hydrological variables for the southeastern Iberian Peninsula*

Participant institutions: University of Murcia

Principal Investigator: Juan Pedro Montávez Gómez

Funding agency: Euromediterranean Institute for Water Research (IEA) - Foundation

Code: UM-5052

Amount: 24500

Number of researchers: 4

Duration from 2007 until 2008

RESEARCH STAYS IN INTERNATIONAL CENTRES

- **Institution:** Justus Liebig University Giessen
Place: Giessen (Germany)
Date: 06-2011 Number of weeks: 4
Topic: Analysis of climate paleosimulations and comparison with proxy reconstructions
- **Institution:** GKSS
Place: Geesthatch (Germany)
Date: 06-2010 Number of weeks: 8
Topic: Analysis of climate paleosimulations and comparison with proxy reconstructions
- **Institution:** Environmental Sciences Research Centre (ESRC)
Place: Antigonish (Nova Scotia) (Canada)
Date: 07-2009 Number of weeks: 6
Topic: Climate Change Projections in high latitudes: evolution of permafrost
- **Institution:** European Centre for Medium-Range Weather Forecast
Place: Reading (United Kingdom)
Date: 09-2008 Number of weeks: 1
Topic: Courses on the use of the ECMWF facilities
- **Institution:** European Centre for Medium-Range Weather Forecast
Place: Reading (United Kingdom)
Date: 02-2008 Number of weeks: 4
Topic: Courses on the use of the ECMWF facilities
- **Institution:** Bariloche Atomic Centre
Place: Bariloche (Argentina)
Date: 08-2006 Number of weeks: 5

Topic: Elaboration of a model for the interactions between matter and particle: study of the Barkas effect

INTERNATIONAL CONGRESSES

Oral presentation in congress, workshops, etc.

- J.P. Montavez, A. García-García, and J.J. Gómez-Navarro. *Wi and NAO in regional climate models experiments*. 14th EMS Annual Meeting & 10th European Conference on Applied Climatology (ECAC). Prague, Czech Republic. 10-2014
- R. Lorente-Plazas, J.P. Montávez, S. Jerez, J.J. Gómez-Navarro, P. Jiménez-Guerrero, and P. Jiménez. *Assessment of the wind speed variability over the Iberian Peninsula using a high-resolution climatic database*. 14th EMS Annual Meeting & 10th European Conference on Applied Climatology (ECAC). Prague, Czech Republic. 10-2014
- J.J. Gómez-Navarro, S. Wagner, E. Zorita. *Is the Analog Method Able to Reconstruct Precipitation Over Europe?*. 13th EMS Annual Meeting & 11th European Conference on Applications of Meteorology (ECAM). Reading, UK. 9-2013
- J.J. Gómez-Navarro, E. Zorita, S. Wagner. *Externally forced and internal variability of tropospheric variability modes in the past millennium*. EGU General Assembly 2013. Vienna, Austria. 4-2013
- J.P. Montávez, J.J. Gómez-Navarro, S. Jerez, R. Baro, R. Lorente, J.A. García-Valero, P. Jimenez-Guerrero. *Evaluation of Regional climate models: how much can we trust in gridded observational data sets?*. EGU General Assembly 2012. Vienna, Austria. 4-2012
- P. Jimenez-Guerrero, R. Baro, J.J. Gómez-Navarro, R. Lorente, J.A. García-Valero, Z. Hernández, J.P. Montávez. *What strategy is needed for attaining the EU air quality regulations under future climate change scenarios? A sensitivity analysis over Europe*. EGU General Assembly 2012. Vienna, Austria. 4-2012
- R. Lorente-Plazas, J.P. Montávez, S. Jerez, J. J. Gómez Navarro, P. Jiménez Guerrero, P. A. Jiménez, J.A. García-Valero, F. Gomáriz-Castillo, F. Alonso-Sarría. *EOLMAP: A web tool to assess the wind resource over Spain*. International conference on renewable energies and power quality (ICREPQ' 12). Santiago de Compostela, Spain. 04-2012
- R. Lorente-Plazas, J.P. Montávez, S. Jerez, J. J. Gómez Navarro, P. Jiménez Guerrero, P. A. Jiménez, J.A. García-Valero, F. Gomáriz-Castillo, F. Alonso-Sarría. *EOLMAP: A web tool to assess the wind resource over Spain*. International conference on renewable energies and power quality (ICREPQ' 12). Santiago de Compostela, Spain. 04-2012
- R. Baró, J.J. Gómez-Navarro, J.P. Montávez, P. Jiménez-Guerrero. *What strategy is needed for attaining the EU air quality legislation in coastal areas? A sensitivity analysis in the Iberian Peninsula*. 8th International conference on air quality: Science and Application. Athens, Greece. 4-2012
- P. Jiménez-Guerrero, S. Jerez, J.J. Gómez-Navarro, J.P. Montávez. *A physics ensemble of air quality-climate change projections over southwestern Europe*. Advanced Study Program Early Career Scientist Assembly Workshop (ASP-ECSA). Boulder, USA. 10-2011
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- S. Jerez, J.P. Montávez, P. Jimenez-Guerrero, J.J. Gómez-Navarro and J.F. Gonzalez-Rouco. *Influence of soil moisture-near surface temperature feedback on present and future climate simulations over the Iberian Peninsula*. 21th Century Challenges in Regional-scale Climate Modelling. Lund, Sweden. 05-2009
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- J.P. Montávez, S. Jerez, J.J. Gómez-Navarro, J.A. García-Valero, P. Jiménez, J.F. González-Rouco. *Análisis de los cambios en temperatura y precipitación proyectados en un conjunto de simulaciones regionales de cambio climático sobre la Península Ibérica.* Clima en España: Pasado. Presente y Futuro. Contribución a un informe de Evaluación del Cambio Climático Regional. Madrid, Spain. 02-2009
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- J.J. Gómez-Navarro, M. Messmer and C. Raible. *Simulating historical wind storms in Switzerland with WRF: identification of the optimal setup and its performance in high-resolution simulations.* 3rd International Lund Regional-Scale Climate Modelling Workshop. Lund, Sweden. 06-2014
- M. Messmer, J.J. Gómez-Navarro and C. Raible. *Using WRF to analyse the role of Vb-events in extreme precipitations over Central Europe.* 3rd International Lund Regional-Scale Climate Modelling Workshop. Lund, Sweden. 06-2014
- J.P. Montavez, S. Jerez, R. Lorente-Plazas, and J.J. Gómez-Navarro. *Sensitivity of regional atmospheric paleoclimate simulations to changes in physical configuration and low boundary conditions.* EMS. Reading, UK. 09-2013
- Pedro Jimenez-Guerrero, Juan J. Gómez-Navarro, Sonia Jerez, Raquel Lorente-Plazas, Rocio Baro, and Juan P. Montávez. *Establishing the common patterns of future tropospheric ozone under diverse climate change scenarios.* EGU General Assembly. Vienna, Austria. 04-2013
- J.J. Gómez-Navarro, S. Wagner, E. Zorita. *Changes in distribution of daily temperature and precipitation between the Late Maunder Minimum and the 2nd half of the 20th century: A regional model study.* AGU Fall Meeting 2012. San Francisco, USA. 12-2012
- R. Baró, J.A. García-Valero, J.J. Gómez-Navarro, R. Lorente-Plazas, J.P. Montávez, P. Jiménez-Guerrero. *Characterizing extreme air pollution events over the Iberian Peninsula by establishing the Circulation Types.* EGU General Assembly 2012. Vienna, Austria. 4-2012

- R. Lorente-Plazas, J.P. Montávez, J.A. García-Valero, J.J. Gómez-Navarro, S. Jerez, R. Baró, P.A. Jiménez, P. Jiménez-Guerrero. *Spatial and temporal wind variability over Spain and its relationship with synoptic weather types*. EGU General Assembly 2012. Vienna, Austria. 4-2012
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- J.J. Gómez-Navarro, J.P. Montávez, P. Jiménez-Guerrero, J.F. González-Rouco, E. García-Bustamante, J. Luterbacher, E. Zorita. *Assessing the Physical Consistence of Several Gridded Reconstructions Over Europe Through a High-Resolution Climate Paleosimulation*. EGU General Assembly 2012. Vienna, Austria. 4-2012
- P. Jiménez-Guerrero, J.P. Montávez, J.J. Gómez-Navarro, Z. Hernández, S. Jerez, R. Lorente-Plazas. *CLIVAR-Spain contributions: Establishing an aerosol climatology for the Mediterranean Basin*. World Climate Research Programme (WCRP) Open Science Conference. Denver, USA. 10-2011
- P. Jiménez-Guerrero, S. Jerez, J.J. Gómez-Navarro, R. Lorente-Plazas, J.P. Montávez. *A physics ensemble of air quality-climate change projections over southwestern Europe for the 21st century*. World Climate Research Programme (WCRP) Open Science Conference. Denver, USA. 10-2011
- F. S. Rodrigo, J.J. Gómez-Navarro y J.P. Montávez. *Reconstruction of the climate of Andalusia (southern Spain) during the period 1750-1850 from documentary sources: evaluation and comparison with climate model simulations*. 11th European Meteorological Society Annual Meeting and 10th European Conference on Applications of Meteorology (ECAM). Berlin, Germany. 09-2011
- P. Jiménez-Guerrero, J.J. Gómez-Navarro, Z. Hernández, R. Lorente Plazas, S. Jerez, J.P. Montávez. *Defining the spatio-temporal changes in future air pollution in the Mediterranean under SRES A2 and B2 scenarios*. 3rd International Meeting on Meteorology and Climatology of the Mediterranean. Castellanata Maria, Italy. 6-2011
- J.F. González-Rouco, L. Fernández-Donado, J. Smerdon, V. Rath, E. Zorita, J.P. Montávez, J. J. Gómez-Navarro. *Quality control of air and ground surface temperatures in the Iberian Peninsula*. EGU General Assembly 2011. Vienna, Austria. 4-2011
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- S. Jerez, J.J. Gómez-Navarro, P. Jiménez-Guerrero, R. Lorente-Plazas y J.P. Montávez. *Uncertainties in MM5 climate simulations: physics configuration vs. driving conditions*. AGU 2010 Fall Meeting. San Francisco, USA. 12-2010
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- J.A. Garcia-Valero, J.P. Montávez, S. Jerez, J.J. Gómez-Navarro, P.A. Jiménez, and J.F. González-Rouco. *Changes in frequency of weather types and their relationship with precipitation patterns over South-East of the Iberian Peninsula*. Annual meeting 9th EMS-9th ECM. Toulouse. 09/10-2009
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- A. Hidalgo, M. Marchante, P.A. Jiménez, E. García-Bustamante, J.P. Montávez, J.J. Gómez-Navarro, M.C. Rico, S. Jerez, J. Navarro, and J.F. González-Rouco. *Validation of the mesoscale model MM5 in reproducing the wind variability in Turkey*. EGU General Assembly 2009. Vienna, Austria. 04-2009

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- A. Hidalgo, J.F.González-Rouco, M. Marchante, P.A. Jiménez, E. García-Bustamante, J. Navarro, M.C. Rico, J.P. Montávez, J.J. Gómez-Navarro, S.Jerez. *Validation of the mesoscale model MM5 in reproducing the wind variability in Turkey*. Clima en España: Pasado. Presente y Futuro. Contribución a un informe de Evaluación del Cambio Climático Regional. Madrid, Spain. 02-2009
- J.J. Gómez-Navarro, J.P. Montávez, S. Jerez, J.A. García-Valero, P. Jiménez and J.F. González-Rouco. *Sobre la relación del calentamiento y la altura en proyecciones regionales de cambio climático*. Clima en España: Pasado. Presente y Futuro. Contribución a un informe de Evaluación del Cambio Climático Regional. Madrid, Spain. 02-2009
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- J.M. Jiménez-Gutierrez 2, J.P. Montávez 1, S. Jerez, J.J. Gómez-Navarro, F. Valero. *Sensibilidad de simulaciones regionales climáticas a la fracción de vegetación*. Clima en España: Pasado. Presente y Futuro. Contribución a un informe de Evaluación del Cambio Climático Regional. Madrid, España. 02-2009
- J.A. García-Valero, J.P. Montávez, S. Jerez, J.J. Gómez-Navarro, J.F. González Rouco. *Estudio de la variabilidad de la precipitación diaria en la Región de Murcia*. Clima en España: Pasado. Presente y Futuro. Contribución a un informe de Evaluación del Cambio Climático Regional. Madrid, España. 02-2009
- S. Jerez, J.P. Montávez, J.J. Gómez-Navarro, J.F.González-Rouco. *Evaluation of soil models coupled to a RCM in simulating the Iberian Peninsula Climate*. AGU 2008 Fall Meeting. San Francisco, USA. 12-2008
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- I. Abril, C. D. Denton, R. Garcia-Molina, J.J. Gómez-Navarro, y N. R. Arista. *Barkas effects for dressed projectiles in a free electron gas: a classical calculation of the contribution due to close collisions*. 23rd International Conference on Atomic Collisions in Solids. ICACS 23. Phalaborwa. 08-2008
- C. D. Denton, R. Garcia-Molina, J.J. Gómez-Navarro, I. Abril y N. R. Arista. *Contribution of close collisions to the Barkas effect for dressed projectiles*. 7th International Symposium on Swift Heavy Ion in Matter. Lyon. 06-2008
- S. Jerez, J.P. Montávez, J.J. Gómez-Navarro, S.B. Navarro. *Aplicación de la Programación Paralela: Simulaciones Climáticas*. Reunión sobre optimización de Rutimas Paralelas y Plicaciones. Murcia. 05-2008

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- S. Jerez, J.P. Montávez, J.J. Gómez-Navarro, S.B. Navarro, J.A. García-Valero, J.F. González-Rouco. *Regionalización dinámica de datos de reanálisis: simulación del clima de la Península Iberica*. XXX Jornadas Científicas de la AME. Zaragoza. 05-2008
- J.J. Gómez Navarro, J.P. Montávez, S. Jerez, J.A. García Valero, S.B. Navarro, J.F. González-Rouco. *Regional climate change over the Iberian Peninsula: warming patterns and spatial and seasonal asymmetries*. EGU General Assembly 2008. Vienna, Austria. 04-2008
- J.P. Montávez, S. Jerez, J.J. Gómez-Navarro, J.A. García-Valero, J. Saenz, J.F. González-Rouco. *Detection and attribution of climate change in the Iberian Peninsula by using regional climate models*. EGU General Assembly 2008. Vienna, Austria. 04-2008

TEACHING ACTIVITIES

Batchelor subjects

- **Energy and Environment (Nuclear Power)** (1.0 ECTS) in 5th course in the Environment Sciences degree in the University of Murcia during the course 2011-2012
- **Meteorology and Climatology** (1.0 ECTS) in 4th course in the Environment Sciences degree in the University of Murcia during the course 2011-2012
- **Meteorology and Climatology** (0.6 ECTS) in 2th course in the Environment Sciences degree in the University of Murcia during the course 2011-2012
- **Energy and Environment (Nuclear Power)** (0.4 ECTS) in 4th course in the Environment Sciences degree in the University of Murcia during the course 2011-2012
- **Earth Physics** (0.4 ECTS) in 3th course in the Environment Sciences degree in the University of Murcia during the course 2011-2012
- **Meteorology and Climatology** (3.9 ECTS) in 2nd course in the Environment Sciences Bachelor in the University of Murcia during the course 2010-2011
- **Meteorology and Climatology** (0.5 ECTS) in 4th course in the Environment Sciences degree in the University of Murcia during the course 2010-2011
- **Energy and Environment (Nuclear Power)** (0.5 ECTS) in 5th course in the Environment Sciences degree in the University of Murcia during the course 2010-2011
- **Meteorology and Climatology** (4 ECTS) in 4th course in the Environment Sciences degree in the University of Murcia during the course 2009-2010
- **Foundaments of Physics** (0.8 ECTS) in 2nd course in the Environment Sciences GRADO in the University of Murcia during the course 2009-2010

Seminars

- *Dynamically Downscaling the Past and Implications for Present and Future*. OCCR Plenary Meeting 1/2014. University of Bern. **2-2014**.
- *Regional Climate Simulations and Its Applications*. Seminary of the Department of Physics. University of Bern. **10-2014**.

- *Regional Climate Simulations for the Present and Recent Palaeoclimate*. Seminary of the Institute of Coastal Research. Helmholtz-Zentrum Geesthacht. **1-2013**.
- *Analysis of Regional High Resolution Simulations of The Climate of Several Areas of Europe in The Last Centuries*. Seminar in the Department of Geography. Justus Liebig University Giessen. Germany. **6-2011**.
- *Introduction to Paleoclimatology*. 2-hours seminar in the subject Meteorology and Climatology in the Master Water Resources Management. University of Murcia. **3-2011**.
- *Research Topics in the Regional Atmospheric Modelling Group at the University of Murcia (Spain)*. Seminar in ESRC. University St. Francis Xavier, Nova Scotia, Canada. **7-2009**.
- *Empirical Orthogonal Functions*. Seminar in the Department of Physics. University of Murcia. **5-2008**.
- *Classical Study of Molecular Vibrations*. Atomic collision division. Bariloche Atomic Centre. Argentina. **9-2006**.

■ Advisor of PhD. Thesis

- I knew you would read this!!! Martina Messmer. *High-Impact Weather Events: Assessing the Sensitivity of the Vb-Type Cyclones to SSTs and Climate Change*. University de Bern. Calification **Not submitted yet**. February 2016.

■ Advisor of Master Thesis

- Claudio Kumpli. *Vb-type climatology, precipitation impacts, and sensitivity to mediterranean SST's using the regional model WRF*. Department of Physics, University of Bern. Calification **Not submitted yet**. June 2014.
- Oliver Baerenbold. *Simulated occurrence, persistence and causes of European droughts through the Common Era*. Department of Physics, University of Bern. Calification **Not submitted yet**. January 2015.

■ Advisor of B. S. Thesis

- Lidia López Martínez. *Modelización del Potencial Eólico en la región de Murcia*. Universidad de Murcia. Calification **9.3, Sobresaliente**. Febrero 2010.
- Jose Javier Fernández Ros. *Cabañuelas ¿Hay capacidad predictiva?*. Universidad de Murcia. Calification **8.6, Notable**. Febrero 2010.

■ EXPERIENCE IN LARGE COMPUTATIONAL SYSTEM

- User of the Swiss National Supercomputing Centre (CSCS)
- User of the computational facilities of the European Centre for Medium-Range Weather Forecast (ECMWF)
- User of the German Climate Computing Centre (Deutsches Klimarechenzentrum, DKRZ)
- User of the ACE-net system (The Atlantic Computational Excellence Network, Canada)
- User and administration of PC's clusters (Beowulf)

OTHER MERITS

Training activities

- **Title:** *Programation in Java focused on Mathematics*
Organizer: Vicerectorado de Estudios
Place: University of Murcia
Date: May 2003
- **Title:** *SMS*
Organizer: ECMWF
Place: Reading (United Kingdom)
Date: February 2008
- **Title:** *MetView*
Organizer: ECMWF
Place: Reading (United Kingdom)
Date: February 2008
- **Title:** *Introduction for new users / MARS*
Organizer: ECMWF
Place: Reading (United Kingdom)
Date: February 2008
- **Title:** *MAGICS*
Organizer: ECMWF
Place: Reading (United Kingdom)
Date: February 2008
- **Title:** *Use of Supercomputing Resources*
Organizer: ECMWF
Place: Reading (Inglaterra)
Date: septiembre 2008
- **Title:** *GRIB API*
Organizer: ECMWF
Place: Reading (United Kingdom)
Date: February 2008

Grants

- Predoctoral grant of the Spanish Ministry of Education in the programme for Training of University Staff. Year 2007-2011.
- Grant of Cajamurcia to get a Master in Quantitative Finance, 10th edition. Year 2005-2006.
- Mobility grant of the Education Ministry for doctoral courses. Year 2005-2006.
- Mobility grant of the Education Ministry to get the Bachelor degree in Physics. Year 2004-2005.
- Mobility grant of the Education Ministry to get the Bachelor degree in Physics. Year 2003-2004.
- Mobility grant of the Education Ministry to get the Bachelor degree in Physics. Year 2002-2003.

- Mobility grant of the Education Ministry to get the Bachelor degree in Physics. Year 2001-2002.
- Mobility grant of the Education Ministry to get the Bachelor degree in Physics. Year 2000-2001.

■ Colaboration with other institutions

- Department of Geography of the University of Bern (Switzerland)
- Helmholtz-Zentrum Geesthacht (Germany)
- Department of Earth Sciences of the St. Francis Xavier University (Canada)
- Department of Physics on the Complutense University of Madrid (Spain)
- Department of Geography of the University Autonoma of Madrid (Spain)
- Departments of Ecology and Physics of the University of Murcia (Spain)
- Department of Geography of the University Justus-Liebig (Germany)
- CIEMAT (Spain)
- Global Forecaster S.L. (Spain)

■ Referee in International Journals

- *Climate Research*. **ISSN:** 0936-577X
- *Climate of the Past*. **ISSN:** 1814-9324

■ Acquired skills

- Administrator in UNIX/LINUX systems
- Administration, building and maintenance of shared calculations systems (PC's clusters)
- Programming skills:
 - ncl (NCAR Command Language)
 - Fortran 90
 - Matlab, Mathematica
 - Shell scripts
 - HTML, CSS, Python (basic knowledge)
- Programation, installation and user of mesoscale models
- Other scriptable software: \LaTeX , Gnuplot, R, Grads, GMT, PINGO, CDO, Gimp, ...

■ Other merits

- Award for the best student in the degree of Physics 2005
- World Climate Research Programme (WCRP) Award for Outstanding Poster Presentation. WCRP Open Science Conference, 24-28 October, Denver, Colorado, USA