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Education

- **Ph.D. Economics**, Carlos III University of Madrid, 2021 - June 2025 (*expected*)
 - ◊ Supervisor: [Jesús Gonzalo](#)
- **Visiting Ph.D. Student**, Aarhus University, Spring 2024
- **M.Sc. Economic Analysis**, Carlos III University of Madrid, 2019 - 2021
- **M.Sc. Economic Sciences**, National University of Colombia, 2015 - 2017
- **B.Sc. Economics**, National University of Colombia, 2011 - 2015

References

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|---|--|
| 1. Jesús Gonzalo UC3M, Full Professor Email: jgonzalo@est-econ.uc3m.es | 2. Evi Pappa UC3M, Full Professor Email: ppappa@eco.uc3m.es |
| 3. Juan J. Dolado UC3M, Full Professor Email: dolado@eco.uc3m.es | 4. Gustavo Canavire World Bank Group, Senior Economist Email: gcanavire@worldbank.org |

Research interests

- **Primary:** Time series econometrics, Climate and environmental economics
- **Secondary:** Applied econometrics, Macroeconomics

Research and Publications

Job Market Paper

- [Quantitative Analysis of Climate Heterogeneity via an Unconditional Quantile Vector Error Correction Model.](#)

Abstract: This paper introduces a time-series methodology to quantify heterogeneity in the evolution of the unconditional temperature distribution and its association with climate drivers. By recognizing that temperature quantiles correspond to different locations—or seasons—, I establish an equivalence between a One-Dimensional Energy Balance Model and a multivariate Vector Error Correction Model (VECM) for a range of distributional characteristics of temperature—mean and quantiles—and total radiative forcing, including radiative forcing from anthropogenic greenhouse gases. The VECM is estimated using time series methods robust to trends in the data, and is utilized to produce several outcomes of practical interest such as: *i)* quantile-dependent climate sensitivities, *ii)* long-term temperature density forecasts, *iii)* identification of distributional shocks and impulse-responses, and *iv)*

projections of temperature distributions under different concentration scenarios. An empirical analysis using station-level temperature records (1880–2021) reveals strong climate heterogeneity at global, hemispheric, and continental (Europe) scales, with important potential implications for damage analysis and integrated assessment modeling. A deeper understanding of global warming dynamics is crucial for better informing adaptation and mitigation policies.

Journal Publications

- Gadea, M.D, Gonzalo, J. and Ramos, A. [Trends in Temperature Data: Micro-foundations of Their Nature](#). **Economics Letters** 2024; 244: 111992. doi: 10.1016/j.econlet.2024.111992.
- Chen, L., Dolado, JJ., Gonzalo, J. and Ramos, A. [Heterogeneous predictive association of CO₂ with global warming](#). **Economica** 2023; 90(360): 1397–1421. doi: 10.1111/ecca.12491.
- Pappa, E., Ramos, A. and Vella, E. [Which Crisis Support Fiscal Measures Worked During the Covid-19 Shock in Europe?](#) **SERIEs-Journal of the Spanish Economic Association** 2023. doi: 10.1007/s13209-023-00288-w.

Working Papers

- [On the Effects of Wildfires on Poverty in Bolivia](#), with Gustavo Canavire and Alejandro Puerta. **R&R in Journal of Development Economics**
- [The Heterogeneous Effects of Changes in Precipitation on Poverty and Labor Outcomes in Ecuador](#), with Gustavo Canavire and Alejandro Puerta

Work in Progress

- Becoming Green: Aggregate and Firm-level Effects of Green Technology News Shocks, with Oscar Jaulín
- High-frequency Density Nowcasts of CO₂ Emissions in U.S. States, with Ignacio Garrón
- From Paleo-Cooling to Paleo-Warming, with Jesús Gonzalo

Reports and Policy Writing Contributions

- Poverty and Equity Assessment in Ecuador, World Bank (*forthcoming*)

Teaching

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- **Carlos III University of Madrid, 2019-2024.** Teaching Assistant for the courses:
 - ◇ Econometrics III: Panel Data and Time Series (PhD level). Fall 2021*, 2022, and 2023*
 - ◇ Econometrics II: ARIMA, VAR and Cointegration (Master level). Spring 2021*, 2022, 2023, and 2024
 - ◇ Econometric Techniques (Bachelor level). Fall 2022 and 2023*
 - ◇ Urban and Regional Economics (Bachelor level), Fall 2020*
 - ★ Awarded for Excellence in Teaching
 - **National University of Colombia, 2016-2019.** Main instructor for the courses:
 - ◇ Advanced Econometrics (Master level). Semesters 2018-II and 2019-I
 - ◇ Econometrics I (Bachelor level). Semesters 2016-II, 2017-I, 2017-II, 2018-I
 - ◇ Microeconometrics I (Bachelor level). Semester 2018-II
 - ★ All Teaching Evaluation Scores above 4.2/5.0

Other Relevant Experience

- Short-term Research Consultant, *World Bank Group*, 2023-2024
- Professional for Economic Valuation of Environmental Impacts, *Servicios Ambientales y Geográficos S.A.*, 2015-2019
- Research and Administrative Assistant in Leisure and Cultural Economics, *National University of Colombia*, 2012-2017
- Academic Visiting, *Universidad de la República de Uruguay*, 2017

Presentations in Seminars, Workshops, and Conferences

- **2024:** Research Seminar at the CID (National University of Colombia, Online); Virtual Workshop for Junior Researchers in Time Series (VTSS, Online); 2024 EAYE Annual Meeting (Paris School of Economics); ENTER Jamboree (Université Libre de Bruxelles); IAAE Annual Conference (University of Macedonia, Thessaloniki); 44th International Symposium on Forecasting (International Institute of Forecasters, Dijon); EMCC-VIII Econometric Models of Climate Change (King's College, University of Cambridge); 2024 European Climate and Energy Modelling Platform (European Commission, Brussels)
- **2023:** IAAE Annual Conference (BI Norwegian Business School, Oslo); EMCC-VII Econometric Models of Climate Change (Vrije Universiteit Amsterdam); ENTER Jamboree (University of Mannheim, Discussant)
- **2022:** XII Workshop in Time Series Econometrics (University of Zaragoza); EMCC-VI Econometric Models of Climate Change (Toulouse School of Economics); ENTER Jamboree (Universidad Autónoma de Barcelona, Discussant)

Additional Coursework

- **2024:** Macroeconomics and Climate Change (CEMFI, Instructors: *John Hassler* and *Per Krusell*)
- **2023:** Local Projection Methods for Time Series and Panel Data (CEMFI, Instructor: *Óscar Jordà*); Econometrics of Program Evaluation using Stata (Timberlake Consultants, Instructor: *Giovanni Cerulli*)
- **2022:** High Dimensional Time Series: Factor Models (Barcelona School of Economics, Instructor: *Luca Sala*); High-Dimensional Time Series: Big Data and Machine Learning (Barcelona School of Economics, Instructor: *Christian Brownlees*)
- **2021** The Economics and Econometrics of Climate Change Policy (CEMFI, Instructor: *James Stock*)

Fellowships, Honors, and Awards

- Grant *Formación de Personal Investigador (FPI)*. Ministry of science and innovation of Spain, 2022-2025
- Grant *Programa de Personal Investigador Predoctoral en Formación (PIPF)*, UC3M, 2021-2022
- Grant *Programa de Estudios en el Exterior*, Banco de la República de Colombia, 2019-2021
- *Summa Cum Laude* distinction to Master's thesis, National University of Colombia, 2017
- Master Programme Scholarship, National University of Colombia, 2015-2017
- *Degree in Economics with Honors*, National University of Colombia, 2015

Personal and Technical Skills

- Languages: Spanish (Native), English (C2), French (B1 and improving)
- Programming: R, Matlab, Julia (Basic), Python (Basic)
- Statistics: R, Stata, Eviews, SPSS
- Others: QGIS, ARCGIS

Last updated: October 22, 2024