Ph. D. Jorge Castillo-Mateo

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Born: November 12, 1997—Zaragoza, Spain
Nationality: Spanish

Current position

Postdoctoral fellow. Department of Statistical Methods, University of Zaragoza, Zaragoza, Spain.

Areas of specialization

Statistics · Bayesian hierarchical models · Environmental and ecological statistics · Extreme value analysis · Markov chain Monte Carlo · R programming · Spatial statistics · Spatio–temporal statistics · Statistical modeling

Education

2020–2023 PhD in Mathematics and Statistics. University of Zaragoza, Zaragoza, Spain.

- PhD Thesis: "Stochastic models for the spatio–temporal analysis of extremes: Applications to the analysis of climate change"
- Supervisors: Ana C. Cebrián and Alan E. Gelfand

2019–2020 MSc in Modeling and Mathematical Research, Statistics and Computing. University of Zaragoza, Zaragoza, Spain. *Extraordinary award.*

2015–2019 BSc in Mathematics. University of Zaragoza, Zaragoza, Spain.

Awards & honors

2023 Award for the best work developed by a young researcher in the XIX Spanish Conference and VIII Iberoamerican Meeting of Biometry. XIX Conferencia Española y VIII Encuentro Iberoamericano de Biometría, Vigo, Spain.

2022 Best Oral Communication Award (Student Category) of the I Conference & XII Meeting of R users. I Congreso & XII Jornadas de usuarios de R, Córdoba, Spain.

2020 Extraordinary Award in the MSc in Modeling and Mathematical Research, Statistics and Computing (top of my year). University of Zaragoza, Zaragoza, Spain.

Positions & grants

2021–2024 Research Personnel in Training grant (Predoctoral DGA). Awarded by the Aragon Government, Spain.

2023 Research visit grant for scholarship recipients of the Predoctoral DGA grant, MVE_06_23. Awarded by the Aragon Government, Spain.

2020 Research Personnel at the Department of Statistical Methods. University of Zaragoza, Zaragoza, Spain.

2019–2020 Santander Progreso grant. Awarded by Banco Santander, S.A.

2019–2020 MSc study grant. Awarded by the Aragon Government, Spain

2018–2019 Student department collaboration grant. Awarded by the Spanish Ministry for Education, Spain.

2015–2020 BSc and MSc study grant. Awarded annually by the Spanish Ministry for Education, Spain.

Research visits

2023 Department of Statistical Science, Duke University, Durham, NC, USA. Visiting Scholar under the supervision of Professor Alan E. Gelfand. From March 15, 2023 to May 14, 2023.

2022 Department of Biostatistics, University of California, Los Angeles, Los Angeles, CA, USA. Collaboration meeting with Professor and Chair Sudipto Banerjee. From April 04, 2022 to April 07, 2022.

2022 Department of Statistical Science, Duke University, Durham, NC, USA. Visiting Scholar under the supervision of Professor Alan E. Gelfand. From January 15, 2022 to May 14, 2022.

Publications

Journal articles indexed in the JCR (9 **Q1** + 5 **Q2** + 2 **Q3**)

16 **Castillo-Mateo, J.**, Gelfand, A. E., Asín, J., Cebrián, A. C., & Abaurrea, J. (*in press*). Bayesian joint quantile autoregression. *Test.* https://doi.org/10.1007/s11749-023-00895-6 [arXiv:2305.19080] [JIF 2022 (JCR): 1.3. Rank: Q3 (72/125) Statistics & Probability]

15 Cebrián, A. C., Asín, J., **Castillo-Mateo, J.**, Gelfand, A. E., & Abaurrea, J. (2023). Assessing space and time changes in daily maximum temperature in the Ebro basin (Spain) using model-based statistical tools. *International Journal of Climatology, 43*(16), 8036–8051https://doi.org/10.1002/joc.8305 [arXiv:2211.10784] [JIF 2022 (JCR): 3.9. Rank: Q2 (35/94) Meteorology & Atmospheric Sciences]

14 **Castillo-Mateo, J.**, Gelfand, A. E., Hudak, C. A., Mayo, C. A., & Schick, R. S. (2023). Space-time multi-level modeling for zooplankton abundance employing double data fusion and calibration. *Environmental and Ecological Statistics, 30*(4), 769–795. https://doi.org/10.1007/s10651-023-00583-6 [JIF 2022 (JCR): 3.8. Rank: Q2 (119/274) Environmental Sciences; Q1 (19/107) Mathematics, Interdisciplinary Applications; Q1 (13/125) Statistics & Probability]

13 **Castillo-Mateo, J.**, Asín, J., Cebrián, A. C., Gelfand, A. E., & Abaurrea, J. (2023). Spatial quantile autoregression for season within year daily maximum temperature data. *Annals of Applied Statistics, 17*(3), 2305–2325. https://doi.org/10.1214/22-AOAS1719 [JIF 2022 (JCR): 1.8. Rank: Q2 (44/125) Statistics & Probability]

12 **Castillo-Mateo, J.**, Cebrián, A. C., & Asín, J. (2023). Statistical analysis of extreme and

record-breaking daily maximum temperatures in peninsular Spain during 1960–2021. *Atmospheric Research, 293*, 106934. https://doi.org/10.1016/j.atmosres.2023.106934 [JIF 2022 (JCR): 5.5. Rank: Q1 (18/94) Meteorology & Atmospheric Sciences]

11 **Castillo-Mateo, J.**, Cebrián, A. C., & Asín, J. (2023). **RecordTest**: An R package to analyse non-stationarity in the extremes based on record-breaking events. *Journal of Statistical Software, 106*(5), 1–28. https://doi.org/10.18637/jss.v106.i05 [JIF 2022 (JCR): 5.8. Rank: Q1 (27/110) Computer Science, Interdisciplinary Applications; Q1 (3/125) Statistics & Probability]

10 **Castillo-Mateo, J.**, Asín, J., Cebrián, A. C., Mateo-Lázaro, J., & Abaurrea, J. (2023). Bayesian variable selection in generalized extreme value regression: Modeling annual maximum temperature. *Mathematics, 11*(3), 759. https://doi.org/10.3390/math11030759 [JIF 2022 (JCR): 2.4. Rank: Q1 (23/329) Mathematics]

9 Cebrián, A. C., Asín, J., Gelfand, A. E., Schliep, E. M., **Castillo-Mateo, J.**, Beamonte, M. A., & Abaurrea, J. (2022). Spatio-temporal analysis of the extent of an extreme heat event. *Stochastic Environmental Research and Risk Assessment, 36*(9), 2737–2751. https://doi.org/10.1007/s00477-021-02157-z [JIF 2022 (JCR): 4.2. Rank: Q2 (73.7%–37/139) Engineering, Civil; Q3 (50.0%–28/55) Engineering, Environmental; Q2 (62.2%–104/274) Environmental Sciences; Q1 (92.4%–10/125) Statistics & Probability; Q2 (74.3%–27/103) Water Resources]

8 **Castillo-Mateo, J.** (2022). Distribution-free changepoint detection tests based on the breaking of records. *Environmental and Ecological Statistics, 29*(3), 655–676. https://doi.org/10.1007/s10651-022-00539-2 [arXiv:2105.08186] [JIF 2022 (JCR): 3.8. Rank: Q2 (56.8%–119/274) Environmental Sciences; Q1 (82.7%–19/107) Mathematics, Interdisciplinary Applications; Q1 (90.0%–13/125) Statistics & Probability]

7 **Castillo-Mateo, J.**, Lafuente, M., Asín, J., Cebrián, A. C., Gelfand, A. E., & Abaurrea, J. (2022). Spatial modeling of day-within-year temperature time series: an examination of daily maximum temperatures in Aragón, Spain. *Journal of Agricultural, Biological and Environmental Statistics, 27*(3), 487–505. https://doi.org/10.1007/s13253-022-00493-3 [arXiv:2201.01687] [JIF 2022 (JCR): 1.4. Rank: Q4 (22.4%–72/92) Biology; Q4 (20.9%–44/55) Mathematical & Computational Biology; Q3 (47.6%–66/125) Statistics & Probability]

6 Mateo-Lázaro, J., **Castillo-Mateo, J.**, García-Gil, A., Sánchez-Navarro, J. Á., Santamarta-Cerezal, J. C., & Fuertes-Rodríguez, V. (2022). Impact of emergency drawdown in off-stream brackish reservoirs – The case of La Loteta Dam (Spain). *Journal of Hydrology, 611*, 128025. https://doi.org/10.1016/j.jhydrol.2022.128025 [JIF 2022 (JCR): 6.4. Rank: Q1 (91.0%–13/139) Engineering, Civil; Q1 (92.8%–15/201) Geosciences, Multidisciplinary; Q1 (91.7%–9/103) Water Resources]

5 Cebrián, A. C., **Castillo-Mateo, J.**, & Asín, J. (2022). Record tests to detect non stationarity in the tails with an application to climate change. *Stochastic Environmental Research and Risk Assessment, 36*(2), 313–330. https://doi.org/10.1007/s00477-021-02122-w [JIF 2022 (JCR): 4.2. Rank: Q2 (73.7%–37/139) Engineering, Civil; Q3 (50.0%–28/55) Engineering, Environmental; Q2 (62.2%–104/274) Environmental Sciences; Q1 (92.4%–10/125) Statistics & Probability; Q2 (74.3%–27/103) Water Resources]

4 Mateo-Lázaro, J., **Castillo-Mateo, J.**, García-Gil, A., Sánchez-Navarro, J. Á., Fuertes-Rodríguez, V., & Edo-Romero, V. (2020). Comparative hydrodynamic analysis by using two-dimensional models and application to a new bridge. *Water, 12*(4), 997. https://doi.org/10.3390/w12040997 [JIF 2020 (JCR): 3.103. Rank: Q2 (50.91%–135/274) Environmental Sciences; Q2 (60.71%–39/98) Water Resources]

3 Mateo-Lázaro, J., **Castillo-Mateo, J.**, Sánchez-Navarro, J. Á., Fuertes-Rodríguez, V., García-Gil, A., & Edo-Romero, V. (2019). Assessment of the role of snowmelt in a flood event in a gauged catchment. *Water, 11*(3), 506. https://doi.org/10.3390/w11030506 [JIF 2019 (JCR): 2.544. Rank: Q2 (67.55%–31/94) Water Resources]

2 Mateo-Lázaro, J., **Castillo-Mateo, J.**, Sánchez-Navarro, J. Á., Fuertes-Rodríguez, V., García-Gil, A., & Edo-Romero, V. (2018). New analysis method for continuous base-flow and availability of water resources based on parallel linear reservoir models. *Water, 10*(4),

465. https://doi.org/10.3390/w10040465 [JIF 2018 (JCR): 2.524. Rank: Q2 (68.68%–29/91) Water Resources]

1 Mateo-Lázaro, J., Sánchez-Navarro, J. Á., García-Gil, A., Edo-Romero, V., & **Castillo-Mateo, J.** (2016). Modelling and layout of drainage-levee devices in river sections. *Engineering Geology, 214*, 11–19. https://doi.org/10.1016/j.enggeo.2016.09.011 [JIF 2016 (JCR): 2.569. Rank: Q1 (81.43%–7/35) Engineering, Geological; Q2 (71.54%–54/188) Geosciences, Multidisciplinary]

Other journal articles

3 Mateo-Lázaro, J., Sánchez-Navarro, J. Á., García-Gil, A., Edo-Romero, V., & **Castillo-Mateo, J.** (2017). Método PLR para la separación del flujo de base continuo y su aplicación con la serie temporal del río Bergantes (PLR method for the separation of continuous base flow and its application with the time series of the Bergantes river). *Geogaceta, 62*, 99–102.

2 Mateo-Lázaro, J., Sánchez-Navarro, J. Á., Edo-Romero, V., & **Castillo-Mateo, J.** (2017). Aplicación de los criterios del reglamento de dominio público hidráulico en la creación de nuevas infraestructuras en España (Application of the Spanish criteria for the water management policy in the creation of new infrastructure). *Geogaceta, 61*, 51–54.

1 Mateo-Lázaro, J., Sánchez-Navarro, J. Á., García-Gil, A., Edo-Romero, V., & **Castillo-Mateo, J.** (2016). Modelado de la red de filtración para el diseño de una mota fluvial (Seepage flow network modelling for the layout of a river levee). *Geo-Temas, 16*(1), 347–350.

Articles submitted for publication or in advanced preparation

Castillo-Mateo, J., Asín, J., Cebrián, A. C., & Gelfand, A. E. **spTReg**: An R package for spatio-temporal mean and quantile auto-regression models. *Manuscript in preparation.* (Tentative title and authors.)

Albarova-Corral, I., Segovia-Burillo, J., Malo-Urriés, M., Asín, J., **Castillo-Mateo, J.**, Gracia-Tabuenca, Z., & Morales-Hernandez, M. Quantitative tool for ultrasonographic assessment of the tendon: A reliability and validity study in patellar tendon. *Manuscript ready to be submitted for publication.*

Castillo-Mateo, J., Gelfand, A. E., Gracia-Tabuenca, Z., Asín, J., & Cebrián, A. C. Spatio-temporal modeling for record-breaking temperature events in Spain. *Manuscript submitted for publication.*

Camón, A., **Castillo-Mateo, J.**, Asín, J., & Cebrián, A. C. Bayesian models for the analysis of climate change in daily maximum temperature series. *Manuscript submitted for publication.*

Book chapers

3 **Castillo-Mateo, J.**, Gelfand, A. E., Asín, J., & Cebrián, A. C. (2023). Joint quantile autoregressive modeling for univariate and spatial time-series data in a Bayesian framework. In J. C. Pardo Fernández, M. X. Rodríguez Álvarez (Eds.), CEB-EIB 2023: Libro de Resúmenes (pp. 31–35).

2 **Castillo-Mateo, J.**, Gelfand, A. E., Asín, J., & Cebrián, A. C. (2022). Detecting climate change in daily temperatures with a space-time quantile autoregressive model. In C. Comas, J. Mateu (Eds.), Proceedings of the 10th International Workshop on Spatio-Temporal Modelling (pp. 125–129). Edicions i Publicacions de la Universitat de Lleida. https://doi.org/10.21001/METMA_X

1 **Castillo-Mateo, J.**, Gelfand, A. E., Asín, J., & Cebrián, A. C. (2022). Spatio-temporal quantile autoregression for detecting changes in daily temperature in northeastern Spain.

In S. Cabras, I. Cascos, M. E. Castellanos, M. Durbán (Eds.), Book of Abstracts XVIII Congreso de Biometría CEBMADRID (pp. 122–126). Universidad Carlos III de Madrid. http://hdl.handle.net/10016/34695

Software

2022–2024 **Castillo-Mateo, J.** (2024). **ZoopFit**: Statistical modeling for zooplankton availability. *R package version 0.0.5*. https://github.com/JorgeCastilloMateo/ZoopFit

2022–2023 **Castillo-Mateo, J.** (2023). **GEVSSVS**: GEV-SSVS regression. *R package version 0.0.6*. https://github.com/JorgeCastilloMateo/GEVSSVS

2022–current **Castillo-Mateo, J.** (2023). **QAR**: Quantile autoRegression. *R package version 0.0.0-2*. https://github.com/JorgeCastilloMateo/QAR

2022–current **Castillo-Mateo, J.** (2023). **spTReg**: Spatio-temporal mean and quantile regression and autoregression. *R package version 0.0.0-4*. https://github.com/JorgeCastilloMateo/spTReg

2019–current **Castillo-Mateo, J.** (2023). **RecordTest**: Inference tools in time series based on record statistics. *R package version 2.2.0*. http://CRAN.R-project.org/package=RecordTest

Talks

Contributed talks (speaker in 15)

2023 ***Castillo-Mateo, J.*** (2023, November 15–16). *Statistical modeling strategies for temperature extremes* [Contributed talk]. INAMAT2-BCAM Jornada Doctoral Perspectivas de la investigación en matemáticas, Pamplona, Spain.

2023 ***Castillo-Mateo, J.***, Gelfand, A. E., Asín, J., & Cebrián, A. C. (2023, November 7–10). *Modelos de autorregresión cuantílica bayesiana: univariante, multivariante y espacial (Bayesian quantile autoregression models: univariate, multivariate and spatial)* [Contributed talk]. XL Congreso Nacional de Estadística e Investigación Operativa, Elche, Spain.

2023 ***Castillo-Mateo, J.***, Gelfand, A. E., Asín, J., & Cebrián, A. C. (2023, July 18–21). *Joint quantile autoregression for space-time data* [Contributed talk]. Spatial Statistics 2023 Conference, Boulder, CO, USA.

2023 ***Castillo-Mateo, J.***, Gelfand, A. E., Asín, J., & Cebrián, A. C. (2023, July 18–21). *Joint quantile autoregression for space-time data* [Contributed talk]. Spatial Statistics 2023 Conference, Boulder, CO, USA.

2023 ***Castillo-Mateo, J.***, Gelfand, A. E., Asín, J., & Cebrián, A. C. (2023, June 27–30). *Joint quantile autoregressive modeling for univariate and spatial time-series data in a Bayesian framework* [Contributed talk]. XIX Conferencia Española y VIII Encuentro Iberoamericano de Biometría, Vigo, Spain. *Award for the best work developed by a young researcher.*

2023 ***Castillo-Mateo, J.***, Gelfand, A. E., Asín, J., & Cebrián, A. C. (2023, May 22–24). *Quantile autoregression* [Contributed talk]. 13th Bayesian Inference for Stochastic Processes, Madrid, Spain.

2022 ***Castillo-Mateo, J.***, Cebrián, A. C., Asín, J., & Gelfand, A. E. (2022, December 17–19). *Mixed effects quantile autoregressive modeling for point-referenced daily maximum temperatures in Aragon, Spain* [Contributed talk]. CFE-CMStatistics 2022, London, UK.

2022 ***Castillo-Mateo, J.***, Cebrián, A. C., & Asín, J. (2022, November 23–25). ***RecordTest**: Un paquete de R para detectar comportamientos no estacionarios en la ocurrencia de eventos récord (**RecordTest**: An R package to detect non-stationary behavior in the occurrence of record events)* [Contributed talk]. I Congreso & XII Jornadas de Usuarios de R, Córdoba, Spain. *Best Oral Communication Award, Student Category.*

2022 ***Castillo-Mateo, J.***, Cebrián, A. C., & Asín, J. (2022, September 14–16). *Records tests*

and applications to climate change [Contributed talk]. VI Jornadas Científicas de Estudiantes de la SEB, Valencia, Spain.

2022 ***Castillo-Mateo, J.***, Gelfand, A. E., Cebrián, A. C., Asín, J., & Abaurrea, J. (2022, June 7–10). *Spatio-temporal modeling and analysis of daily maximum temperatures* [Contributed talk]. XXXIX Congreso Nacional de Estadística e Investigación Operativa, Granada, Spain.

2022 ***Castillo-Mateo, J.***, Gelfand, A. E., Asín, J., & Cebrián, A. C. (2022, June 1–3). *Detecting climate change in daily temperatures with a space-time quantile autoregressive model* [Contributed talk]. 10th International Workshop on Spatio-Temporal Modelling, Lleida, Spain.

2022 ***Castillo-Mateo, J.***, Gelfand, A. E., Asín, J., & Cebrián, A. C. (2022, May 25–27). *Spatio-temporal quantile autoregression for detecting changes in daily temperature in northeastern Spain* [Contributed talk]. XVIII Congreso de Biometría, Madrid, Spain.

2021 ***Castillo-Mateo, J.*** (2021, June 28–July 2). *Nonparametric changepoint detection tests based on the breaking of records* [Contributed talk]. Extreme Value Analysis 2021, Online.

2020 ***Castillo-Mateo, J.*** (2020, November 24–December 9). *Tests for non-stationarity based on theory of records: An application to climate change* [Contributed talk]. 1st International Workshop on Stochastic Processes and their Applications, Online.

2019 ***Castillo-Mateo, J.***, Cebrián, A. C., Lafuente, M., Sanz, G., & Abaurrea, J. (2019, September 3–6). *Análisis de récords. Aplicación a la detección de cambio climático (Analysis of records. Application to the detection of climate change)* [Contributed talk]. XXXVIII Congreso Nacional de Estadística e Investigación Operativa, Alcoy, Spain.

Posters (speaker in 3)

2024 ***Castillo-Mateo, J.***, Aguilar, J. J., Asín, J., & Elviro, I. (2024, January 22–26). *Modelización estadística de accidentes de tráfico laborales (Statistical modeling of work-related traffic accidents)* [Poster session]. Congreso Bienal de la Real Sociedad Matemática Española 2024, Pamplona, Spain.

2023 ***Castillo-Mateo, J.***, Asín, J., Cebrián, A. C., & Gelfand, A. E. (2023, January 24–26). *Spatio-temporal modeling of the trend in daily maximum temperature quantiles: A case study in Aragón, Spain* [Poster session]. CLIVAR 2023: Towards an integrated view of climate, Madrid, Spain.

2021 ***Castillo-Mateo, J.***, Lafuente, M., & Gelfand, A. E. (2021, July 12–16). *Hierarchical spatio-temporal modeling of daily maximum temperatures: A case study in the Ebro river basin* [Poster session]. Valencia International Bayesian Analysis Summer School 4, Valencia, Spain.

Editorial work

Peer review

2023–current Natural Hazards. 2023 (1)
2023–current Atmospheric Research. 2023 (1)
2023–current Environmental and Ecological Statistics. 2023 (1); 2024 (1)
2023–current Journal of Agricultural, Biological and Environmental Statistics. 2023 (1)
2022–current Computers & Geosciences. 2022 (1)
2020–current Stochastic Environmental Research and Risk Assessment. 2020 (1); 2022 (1)
2018–current Journal of Hydrology. 2018 (3); 2019 (5); 2020 (4); 2021 (4); 2022 (5); 2023 (2)
2020 Renewable Energy. 2020 (4)

Research projects and contracts

2023–2024 Asesoría estadística para el análisis de datos médicos en el ámbito de la oftanmología (Statistical advice for the analysis of medical data in the field of ophthalmology), E46_23R. Fundación Instituto de Investigación Sanitaria de Aragón. PI: Jesús Asín Lafuente (University of Zaragoza).

2023–2025 Grupo de Modelos Estocásticos (Group of Stochastic Models), E46_23R. Government of Aragon. PI: Gerardo Sanz Sáiz, Francisco Javier López Lorente (University of Zaragoza).

2023 Modelización estadística de los accidentes laborales de tráfico en la provincia de Zaragoza (Statistical modeling of traffic accidents in the province of Zaragoza), C029/2022_1. Universidad de Zaragoza, Cátedras. PI: Jesús Asín Lafuente (University of Zaragoza).

2023–2024 Mathematical modelling for tendon injuries, 2023/0199. In-forma fisioterapia, S.L. PI: Mario Morales Hernández (University of Zaragoza).

2022–2024 Modelización y proyección de extremos medioambientales para evaluación del cambio climático. Aplicación en la cuenca del Ebro y en Pirineos (ExCaCli) (Modelling and projection of extremes in environmenal sciences to assess climate change. An application to the Ebro basin and the Pyrenees (ExCaCli)), TED2021-130702B-I00. Spanish Ministry of Science and Innovation. PI: Ana Carmen Cebrián Guajardo, Gerardo Sanz Sáiz (University of Zaragoza).

2021–2023 Diseño, impresión 3D y modelado predictivo de apósitos para la curación de heridas basado en hidrogeles reforzados con estructuras augénicas (Design, 3D printing and predictive modeling of wound healing dressings based on hydrogels reinforced with augenic structures), LMP176_21. Government of Aragon. PI: María de los Ángeles Pérez Ansón (University of Zaragoza).

2021–2024 Modelos estocásticos para estimación y predicción en Medicina y extremos medioambientales (Stochastic models for estimation and prediction in medicine and environmental extremes), PID2020-116873GB-I00. Spanish Ministry of Science and Innovation. PI: Francisco Javier López Lorente, Ana Carmen Cebrián Guajardo (University of Zaragoza).

2020–2022 Grupo de Modelos Estocásticos (Group of Stochastic Models), E46_20R. Government of Aragon. PI: Gerardo Sanz Sáiz (University of Zaragoza).

2020–2021 Modelos estocásticos y extremos en climatología y medicina. Resultados exactos y asintóticos. Aplicaciones (Stochastic models and extremes in climatology and medicine. Exact and asymptotic results. Applications), MTM2017-83812-P. Spanish Ministry of Science and Innovation. PI: Gerardo Sanz Sáiz, Francisco Javier López Lorente (University of Zaragoza).

Teaching

Teaching

2023–2024 4 ECTS of the course Regression Techniques (27033), of the BSc in Mathematics, University of Zaragoza, Zaragoza (Spain).

2022–2023 2.8 ECTS of the course Regression Techniques (27033), of the BSc in Mathematics, University of Zaragoza, Zaragoza (Spain).

2021–2022 3 ECTS of the course Regression Techniques (27033), of the BSc in Mathematics, University of Zaragoza, Zaragoza (Spain).

2021–2022 1 ECTS of the complementary course Introduction to Bayesian Analysis, Faculty of Sciences, University of Zaragoza, Zaragoza (Spain).

Master's theses

2022–2023 Alejandro Camón Fernández. Procedimientos de modelización bayesiana y validación para series diarias de temperatura georreferenciadas (Bayesian modeling and validation proce-

dures for daily georeferenced temperature series). University of Zaragoza, Zaragoza (Spain).

Bachelor's theses

2022–2023 Jorge Navarro Lapena. Modelos bayesianos para representar el efecto de variables atmosféricas en series dinámicas de temperatura (Bayesian models to represent the effect of atmospheric covariates in dynamic temperature series). University of Zaragoza, Zaragoza (Spain).

2022–2023 Ariadna Beltrán Rodríguez. Estadística espacial para datos punto referenciados (Spatial statistics for point-referenced data). University of Zaragoza, Zaragoza (Spain).

2021–2022 Javier Torcal Villadangos. Modelos bayesianos para series temporales climáticas (Bayesian models for climate time series). University of Zaragoza, Zaragoza (Spain).

2021–2022 Martín Alcalde Navarro. Modelos jerárquicos bayesianos (Bayesian hierarchical models). University of Zaragoza, Zaragoza (Spain).

2021–2022 David Pérez Ros. Métodos Monte Carlo basados en cadenas de Markov (Monte Carlo methods based on Markov chains). University of Zaragoza, Zaragoza (Spain).

Teaching innovation projects

2023–2024 PIIDUZ_4731: Herramientas digitales y evaluación continua para la mejora del aprendizaje e implicación del alumnado en contenidos de Estadística en el Grado de Relaciones Laborales y Recursos Humanos (Digital tools and continuous evaluation to improve learning and student involvement in Statistics content in the Degree in Labor Relations and Human Resources). University of Zaragoza, Zaragoza, Spain. Coordinator: Miguel Lafuente Blasco.

2023–2024 PIIDUZ_5058: Indicadores para la evaluación de competencias transversales en asignaturas "puntos de control" de Estadística a través de informes sobre metas planteadas en los ODS (Indicators for the evaluation of transversal competencies in "control point" subjects of Statistics through reports on goals set out in the SDGs). University of Zaragoza, Zaragoza, Spain. Coordinator: Zeus Gracia Tabuenca.

2022–2023 PIIDUZ_770: Primeros pasos en la implementación de los ODS en asignaturas de Estadística (First steps in the implementation of the SDGs in Statistics subjects). University of Zaragoza, Zaragoza, Spain. Coordinator: José Ángel Iranzo Sanz.

2021–2022 PIIDUZ_346: Primeros pasos en la implementación de los ODS en asignaturas de Estadística (First steps in the implementation of the SDGs in Statistics subjects). University of Zaragoza, Zaragoza, Spain. Coordinator: María del Carmen Galé Pola.

Professional societies

2024–current European Geosciences Union (EGU)

2023–current The Spatial Statistics Society

2023–current The International Society for Bayesian Analysis (ISBA)

2022–current Sociedad Española de Bioestadística (SEB, International Biometric Society)

2020–current Sociedad de Estadística e Investigación Operativa (SEIO, Statistics and Operations Research Society)

Date: January 24, 2024