

## Jorge P. Rodríguez

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Postdoctoral fellow, Instituto Mediterráneo de Estudios Avanzados (IMEDEA), CSIC-UIB

### 1. Keywords

Big data, complex networks, animal movement, marine megafauna, disease spreading

### 2. Professional positions

**2014-2018** PhD researcher. Formación de Profesorado Universitario (FPU) fellowship, Spanish Ministry of Education, Culture and Sport. Instituto de Física Interdisciplinar y Sistemas Complejos IFISC (CSIC-UIB), Palma de Mallorca, Spain

**2018-2019** Postdoctoral researcher. Funding from project Coupled Animal and Artificial Sensing for Sustainable Ecosystems (CAASE). IFISC (CSIC-UIB), Palma de Mallorca, Spain

**2019-2020** Postdoctoral researcher. Sociopatterns collaboration. ISI Foundation, Turin, Italy

**2020-** Tutoring professor. Associated centre in Balearic Islands, National Distance University UNED

**2020-2021** Postdoctoral researcher. Instituto de Biocomputación y Física de Sistemas Complejos BIFI, Universidad de Zaragoza, Spain

**2021-** Postdoctoral researcher. Juan de la Cierva Formación fellowship, Spanish Ministry of Science and Innovation. Instituto Mediterráneo de Estudios Avanzados (CSIC-UIB), Esporles, Spain

### 3. Academic qualifications

**2018** PhD in Physics. University of Balearic Islands (Spain)

**2014** Master's Degree in Physics of Complex Systems (60 ECTS). University of Balearic Islands (Spain)

**2013** 5 year Degree in Physics (300 ECTS). University of Valencia (Spain). Erasmus at Imperial College London (9 months, United Kingdom)

**2018** Degree in Social and Cultural Anthropology (240 ECTS, 2018). National Distance Education University (Spain)

### 4. Publications

**2022** Fernández-Gracia, J., Rodríguez, J.P., Peel, L.R., Klemm, K., Meekan, M.G., Eguíluz, V.M. Inferring leader-follower behavior from presence data in the marine environment: a case study on reef manta rays. Preprint at [https://scipost.org/submissions/scipost\\_202204\\_00019v1/](https://scipost.org/submissions/scipost_202204_00019v1/)

**2022** Rodríguez, J.P., Paoluzzi, M., Levis, D., Starnini, M. Epidemic processes on self-propelled particles: continuum and agent-based modelling. Preprint at arXiv:2203.12355

**2021** Bates, A.E., et al. Global COVID-19 lockdown highlights humans as both threats and custodians of the environment. *Biological Conservation* 263,109175

**2021** Calich, H., Rodríguez, J.P., Eguíluz, V.M., Hammerschlag, N., et al. Comprehensive analytical approaches reveal species-specific search strategies in sympatric apex predatory sharks. *Ecography* 44, 1544

- 2021** Ozella, L., Paolotti, D., Lichand, G., Rodríguez, J.P., Haenni, S., *et al.* Using wearable proximity sensors to characterize contact patterns in a village of rural Malawi. *EPJ Data Science* 10, 46
- 2021** Rodríguez, J.P., Fernández-Gracia, J., Duarte, C.M., Irigoien, X., *et al.* The global network of ports supporting high seas fishing. *Science Advances* 7, eabe3470
- 2021** Kazimierski, L.D., Rodríguez, J.P., Eguíluz, V.M. Design of deployment strategies to monitor the movement of animals with passive electronic devices. *Sensors* 21, 236
- 2020** Eguíluz, V.M., Fernández-Gracia, J., Rodríguez, J.P., Pericas, J.M., Melián, C.M. Risk of secondary infection waves of COVID-19 in an insular region: the case of the Balearic Islands, Spain. *Frontiers in Medicine* 7, 563455
- 2019** Sequeira, A.M.M., Hays, G.C., Sims, D.W., Eguíluz, V.M., Rodríguez, J.P., *et al.* Overhauling ocean spatial planning to improve marine megafauna conservation. *Frontiers in Marine Science* 6, 639
- 2019** Rodríguez, J.P., Ghanbarnejad, F., Eguíluz, V.M. Particle velocity controls phase transitions in contagion dynamics. *Scientific Reports* 9, 6463
- 2018** Melián, C.J., Matthews, B., de Andreazzi, C.S., Rodríguez, J.P., *et al.* Deciphering the interdependence between ecological and evolutionary networks. *Trends in Ecology and Evolution* 33, 504
- 2018** Sequeira, A.M.M., Rodríguez, J.P., Eguíluz, V.M., Harcourt, R.G., *et al.* Convergence of marine megafauna movement patterns in coastal and open oceans. *Proceedings of the National Academy of Sciences* 115, 3072
- 2018** Rodríguez, J.P., Liang, Y.H., Huang, Y.J., Juang, J. Diversity of hysteresis in a fully cooperative coinfection model. *Chaos* 28, 023107
- 2017** Rodríguez, J.P., Ghanbarnejad, F., Eguíluz, V.M. Risk of coinfection outbreaks in temporal networks: a case study of a hospital contact network. *Frontiers in Physics* 5, 46
- 2017** Rodríguez, J.P., Fernández-Gracia, J., Thums, M., Hindell, M.A., *et al.* Big data analyses reveal patterns and drivers of the movements of southern elephant seals. *Scientific Reports* 7, 112

## 5. Citation Statistics

Number of citations: 244 (Google Scholar)

h-index: 8 (Google Scholar)

## 6. Reviewing activity for peer-review journals

PLOS ONE, JSTAT, PeerJ, Chaos, Complexity, Science Progress

## 8. Awards

-2<sup>nd</sup> National End-Of-Degree Award. Degree in Physics. Spanish Ministry of Education, Culture and Sport

-Selected photography “El árbol pendular” (The pendular tree) for national scientific photography exhibition, Fotciencia 14 (2017)

## 9. Conference presentations (oral communications)

- 2021** “Fishing at the High Seas: the Global Network Connecting Ports to Fishing Areas”. Conference on Complex Systems, CCS21, Lyon (France)
- 2021** “Big Data analytics for marine movement tracking data: a global picture”. I Annual Meeting of the Spanish Tracking Network, Palma

(Spain)

- 2021** "The global network of ports supporting high seas fishing". FisEs Joven '21 (online)
- 2019** "Structure and dynamics of contact patterns among structured populations in South Africa". Conference on Complex Systems, CCS19, Singapore
- 2019** "Genome networks and the stability of diversification". Conference on Complex Systems, CCS19, Singapore
- 2018** "Cooperative disease spreading in networks of mobile particles: how mobility can speed up, slow down and change the nature of the epidemic phase transition". Conference on Complex Systems, CCS18, Thessaloniki (Greece)
- 2018** "Inferring intraspecific tracing behaviour in animal movement". Conference on Complex Systems, CCS18, Thessaloniki (Greece)
- 2017** "Coinfection in the space: cooperative disease spreading in geometric and contact networks". COSTNET17 (Palma de Mallorca)
- 2017** "Cooperative spreading diseases in temporal networks". 8<sup>th</sup> Conference on Complex Networks, CompleNet'17, Dubrovnik (Croatia)

#### **10. Stays in Research centres**

- 2018** Indian Ocean Marine Research Centre, University of Western Australia (Australia). Research stay with Dr. Ana Sequeira.
- 2018** Department of Engineering Mathematics, University of Bristol (United Kingdom). Research stay with Dr. Naoki Masuda. Funding: COSTNET (EU COST Action)
- 2016-2017** Eawag (Switzerland). Research stays with Dr. Carlos Melián. Funding (2016): Obra Social la Caixa
- 2016** National Chiao-Tung University (Taiwan). Research stay with Prof. Jong Juang. Funding: Ministry of Science and Technology of Taiwan
- 2016** University of Western Australia (Australia). Research stay with Dr. Ana Sequeira