Dr. Daniel Romero Mujalli

Dr. rer. nat. Daniel Romero Mujalli

Research interests

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Hello! I'm a Biologist very much interested in eco-evolutionary modelling, programming and in the use of machine learning techniques for my research and data analysis.

My research interest is mainly the study of eco-evolutionary dynamics, the understanding of evolutionary mechanisms, their limits and effects on evolvability; how novelty arises and spread as innovations, the identification of conditions promoting population persistence, and the application of scientific knowledge across disciplines. I like to approach my research questions from an interdisciplinary point of view, which includes (among other fields) working with electronic engineers. In my research I have developed agent-based models and used machine learning techniques for the study of adaptive systems and eco-evolutionary dynamics to understand organisms responses to their environment and its changes.

Currently, I am working on the evolution of language, using machine learning models for the analysis of animal vocalizations.

Daniel Romero Mujalli in ResearchGate; in GitHub; personal blog

Professional and scientific career

2019 Current
Post-doc at the Institute of Zoology, University of Veterinary Medicine Hannover

2015 2019
Ph.D. studies and thesis (*Dr. rer. nat.*) at the University of Potsdam**: Ecological modelling of adaptive evolutionary responses to rapid climate change**. 1st supervisor: Prof Dr Ralph Tiedemann; 2nd supervisor: Prof Dr Florian Jeltsch. External referees: Prof Dr F. J. Weissing (University of Groningen), and PD Dr Thomas Hovestadt (University of Würzburg)

2013 2014
Pre-doctoral researcher, Helmholtz Centre for Ocean Research Kiel GEOMAR, Kiel, Germany.
Biogeochemical modeling research group. Supervisor: Prof. Dr. Andreas Oschlies

2010 2013
MSc. in Biological Sciences at the Simon Bolivar University, Venezuela. Thesis: **Adaptive value of social learning in static and dynamic environments**. 1st supervisor: MSc. Jose Cappelletto; 2nd supervisor: Prof. Dr. Emilio Herrera

2002 2009
Dipl. in Biology at the Simon Bolivar University, Venezuela. Thesis: **Whistle characterization of bottlenose dolphins, *Tursiops truncatus*, in the coast of Aragua state, Venezuela**. Supervisor: Prof Dr Guillermo Barreto

Awards & grants

2019
Magna cum laude (PhD) University of Potsdam, Germany

2015 2018
PhD scholarship at the University of Potsdam, Germany

2017
Internship award RESPONSE exchange grants, University of Greifswald, supervisor: Prof Dr. Gerald Kerth.

2013
Master thesis work Passed-Outstanding, Simon Bolivar University, Venezuela

2008
Grant award from Cetacean Society International CSI

Publications

Romero-Mujalli D, Jeltsch F, Tiedemann R (2019) Elevated mutation rates are unlikely to evolve in sexual species, not even under rapid environmental change. *BMC Evolutionary Biology Journal.* 19(1):175. doi: 10.1186/s12862-019-1494-0

Romero-Mujalli D, Jeltsch F, Tiedemann R (2018) Individual-based modeling of eco-evolutionary dynamics: state of the art and future directions. *Reg Environ Change*. doi: 10.1007/s10113-018-1406-7

Romero-Mujalli D, Cappelletto J, Herrera EA, Tárano Z (2017) The effect of social learning in a small population facing environmental change: an agent-based simulation. *J Ethol* 35:61 73. doi: 10.1007/s10164-016-0490-8

Romero-Mujalli D, Tárano Z, Cobarrubia S, Barreto G (2014) Characterization of the whistles of *Tursiops truncatus* (Cetacea: Delphinidae) and their association with surface behavior. Argent J Behav Sci 6:15 29

Romero-Mujalli D, Tárano Z (2012) Social learning and its feasibility as a form of inheritance. MIBE 6:97-100

Further scientific activities

2018
Reviewer (2 reviews), Ecological Modelling (ELSEVIER Journals)

2017
Lecturer, summer semester at Potsdam University on eco-evolutionary modelling using IBMs. Supervisor: Prof. Dr. Ralph Tiedemann

2011-2012
Internship mechatronic laboratory, Simon Bolivar University, Venezuela. Supervisor: MSc Jose Cappelletto