

LIST OF PUBLICATIONS RELATED TO THE PROJECT

Andrian, L.G., Osman, M. & Vera, C.S. Climate predictability on seasonal timescales over South America from the NMME models. *Clim Dyn* (2022). <https://doi.org/10.1007/s00382-022-06506-8>

Charó, G. D., Chekroun, M. D., Sciamarella, D., and Ghil, M.: Noise-driven topological changes in chaotic dynamics, *Chaos*, 31, 103 115, (2021) <https://doi.org/10.1063/5.0059461>

Charó, G. D., Letellier, C., and Sciamarella, D. (Featured article): Templex: A bridge between homologies and templates for chaotic attractors, *Chaos: An Interdisciplinary Journal of Nonlinear Science*, 32, 083 108 (2022) <https://doi.org/10.1063/5.0092933>

Charó, G. D., Ghil, M., and Sciamarella, D.: Random templex encodes topological tipping points in noise-driven chaotic dynamics, under review <https://arxiv.org/pdf/2212.14450.pdf> [nlin.CD]

Ghil, M. and Sciamarella, D.: Review Article: Dynamical Systems, Algebraic Topology, and the Climate Sciences, *EGUsphere* [preprint] <https://doi.org/10.5194/egusphere-2023-216>

Sciamarella, D. and Charó, G. D.: New elements for a theory of chaos topology. Springer volume: *Topological Methods for Delay and Ordinary Differential Equations*, under review.

LIST OF PARTICIPATIONS IN SEMINARS AND CONGRESSES RELATED TO THE PROJECT

Sciamarella, D. "Perspectives on Climate Sciences:" Worldwide Webinar organized by the EGU division of Nonlinear Processes, held online and available at <https://youtu.be/W1yndTsvR0g>, Jul (2021)

Charó, G. D., Ghil, M., and Sciamarella, D.: Early warning signals for topological tipping points, EGU General Assembly 2022, Vienna, Austria, 23–27 May 2022, EGU22-12686, <https://doi.org/10.5194/egusphere-egu22-12686>, (2022)

Sciamarella, D., Bonel, J. C., Saraceno, M. and Guinet, C. Ocean Surface Topography Science Team Meeting 2022, SC32022 024 - Topological analysis of oceanographic time series - Palazzo del Cinema at Lido di Venezia, Venice (Italy) Monday, Oct (2022)

LIST OF THESES DEVELOPED IN THE PROJECT

PhD thesis: Bonel, J. C.: Topological analysis of oceanographic time series, supervised by D. Sciamarella & M. Saraceno, co-tutelle with Université de La Rochelle, supervised by C. Guinet, with MITI-CNRS grant 2021-2023.

PhD thesis: Mosto, C.: Analysis and validation of climate simulations using topological techniques in nonlinear dynamics, supervised by D. Sciamarella & J. Ruiz, with CONICET grant 2022-2027.

PhD tesis: Alejandra de Vera. Improvements in hydrological ensemble forecast and their incorporation to the management of the electric system in Uruguay, supervised by Rafael Terra. To be defended in 2023.

Master thesis: Viazzo, C: Seasonal predictability of low level winds by two seasonal forecasts systems. Directed by Emilio Bianchi and Marisol Osman. Expected completion by March 2024.

Master thesis: Salvagni, L.: Topological analysis of Climate Data. Mathematics Department FCEN-UBA, directors: P. Amster & G. D. Charó.

Master thesis: Barreal, A.: Construction of cell complexes for topological analysis of dynamical systems, directors: P. Roca & G. D. Charó, Informatics Department FI-UBA.

Internship: Baoche, Y.: Stochastic strange attractors from a topological point of view, Supervised by: Michael Ghil, Denisse Sciamarella, Gisela Daniela Charó, at ENS-LMD (2022)