# **Special Issue**

# An Information-Theoretical Perspective on Complex Dynamical Systems

# Message from the Guest Editors

This Special Issue aims at introducing new insights and approaches for advancing the study of general complex systems. Topics of interest for this Special Issue include, but are not limited to, the following themes:

- Building suitable unambiguous mathematical models for statistical/stochastic prediction, parameter estimation, and uncertainty quantification;
- Improved understanding of model-based ensemble forecast using information theory and judicious comprehensive mathematical tools;
- New data-driven and machine learning strategies to characterize the dynamical and statistical features of high-dimensional complex systems;
- Emerging development of multiscale algorithms for filtering/data assimilation and state estimation for complex systems and real-world applications;
- Information barriers and improving the skill with model errors for state estimation and prediction.

# **Guest Editors**

Dr. DI QI Department of Mathematics, Purdue University, West Lafayette, IN 47907, USA

#### Prof. Dr. José F.F. Mendes

Department of Physics & I3N, University of Aveiro, 3810-193 Aveiro, Portugal

# Deadline for manuscript submissions

closed (31 March 2025)



Entropy

an Open Access Journal by MDPI

Impact Factor 2.0 CiteScore 5.2 Indexed in PubMed



mdpi.com/si/186669

Entropy Editorial Office MDPI, Grosspeteranlage 5 4052 Basel, Switzerland Tel: +41 61 683 77 34 entropy@mdpi.com

mdpi.com/journal/

entropy





an Open Access Journal by MDPI

Impact Factor 2.0 CiteScore 5.2 Indexed in PubMed



entropy



# About the Journal

# Message from the Editor-in-Chief

The concept of entropy is traditionally a quantity in physics that has to do with temperature. However, it is now clear that entropy is deeply related to information theory and the process of inference. As such, entropic techniques have found broad application in the sciences.

*Entropy* is an online open access journal providing an advanced forum for the development and/or application of entropic and information-theoretic studies in a wide variety of applications. *Entropy* is inviting innovative and insightful contributions. Please consider *Entropy* as an exceptional home for your manuscript.

# Editor-in-Chief

Prof. Dr. Kevin H. Knuth

Department of Physics, University at Albany, 1400 Washington Avenue, Albany, NY 12222, USA

# **Author Benefits**

# **Open Access:**

free for readers, with article processing charges (APC) paid by authors or their institutions.

# High Visibility:

indexed within Scopus, SCIE (Web of Science), Inspec, PubMed, PMC, Astrophysics Data System, and other databases.

# Journal Rank:

JCR - Q2 (Physics, Multidisciplinary) / CiteScore - Q1 (Mathematical Physics)