



entropy



an Open Access Journal by MDPI

Entropic Forces in Complex Systems

Guest Editor:

Prof. Dr. Dimitri Volchenkov

Department of Mathematics and
Statistics, Texas Tech University,
1108 Memorial Circle, Lubbock,
TX 79409, USA

Deadline for manuscript
submissions:

closed (28 February 2021)

Message from the Guest Editor

Entropic forces have attracted considerable attention as ways to reformulate, retrodict, and perhaps even “explain” classical Newtonian gravity from a rather specific thermodynamic perspective, as Verlinde suggested. Alex Wissner-Gross and Cameron Freer recently proposed “a causal generalization of entropic forces” that they showed can induce certain patterns of behavior with some very striking characteristics. One would not guess those outcomes by looking purely at the constraint that produces them. Underlying this set of intriguing behaviors is simply the computational capability to integrate over all possible futures to maximize the rate of entropy production over an entire trajectory. The observed behavior bears striking resemblance to examples we have seen in swarm intelligence, communities, and in urban studies. The process of sampling alternative paths and behaviors reveals the essential features of quantum mechanics, one of which is the inclination of electrons to “explore all paths” that can be viewed as part of a search process, bounded in space by maximal causal entropy and in time by minimum coordination latency.



mdpi.com/si/37467

Special Issue



entropy



an Open Access Journal by MDPI

Editor-in-Chief

Prof. Dr. Kevin H. Knuth

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

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.

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)

Contact Us

Entropy Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland

Tel: +41 61 683 77 34
www.mdpi.com

mdpi.com/journal/entropy
entropy@mdpi.com
[X@Entropy_MDPI](https://twitter.com/Entropy_MDPI)