Special Issue

Gaussian Fields and Their Application in Computational Engineering and Mathematical Physics

Message from the Guest Editors

The real world is inherently associated with uncertainty. Therefore, any digital model of a real-world phenomenon should account for these uncertainties. Probabilistic modeling, as a natural way of addressing such uncertainties, enables one to reason under uncertainty and make informed decisions in situations where complete information is unavailable. In recent years, probabilistic modeling has gained substantial attention due to the continuous increase in computing power and the growing availability of data.

Gaussian fields such as one-dimensional Gaussian processes, as a subset of probabilistic modeling, play a significant role in computational engineering. Because of their versatility and flexibility, Gaussian random fields are often employed for forecasting, surrogate modeling, and the modeling of population variability. Despite the advances made, challenges such as computational efficiency and the need for physically viable fields hinder their full potential in computational engineering and mathematical physics. This Special Issue aims to address these theoretical challenges as well as various applications of Gaussian processes.

Guest Editors

Prof. Dr. Robertas Alzbutas
Prof. Dr. Mark Girolami
Dr. Hussein Rappel

Deadline for manuscript submissions

closed (30 September 2025)

Entropy

an Open Access Journal by MDPI

Impact Factor 2.0
CiteScore 5.2
Indexed in PubMed

mdpi.com/si/205559

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

mdpi.com/journal/entropy

Entropy

an Open Access Journal by MDPI

Impact Factor 2.0
CiteScore 5.2
Indexed in PubMed

mdpi.com/journal/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)

MDPI