

## Special Issue

# Machine Learning and Modern Numerical Methods in Partial Differential Equations

### Message from the Guest Editors

Machine learning and its related numerical modelling are emerging tools in solving partial differential equations which underpin science and engineering. It needs to mention that in practical applications, machine learning has recently attracted great attentions in modelling and solving complex systems. This special issue will bring together experts in applied mathematics and computational mathematics to discuss fundamental problems and practical applications of machine learning and its related methodologies in solving partial differential equations and modelling complex systems. This special issue also includes papers around modern numerical techniques based on machine learning in interdisciplinary fields. Topics of interest include, but not limited to:

- Machine learning-based numerical algorithm for solving high dimensional PDEs.
- Deep reinforcement learning in control problems
- Machine learning approach in uncertainty quantification
- Reduced order modelling in complex systems
- Mathematical methods in kernel learning

Machine learning and artificial intelligence in fluid dynamics, which includes recent significant developments on modelling and computations.

---

### Guest Editors

Dr. Xinlong Feng

College of Mathematics and Systems Science, Xinjiang University,  
Urumqi 830049, China

Dr. Hui Xu

School of Aeronautics & Astronautics, Shanghai Jiao Tong University,  
Shanghai 200240, China

---

### Deadline for manuscript submissions

closed (31 March 2023)



## Entropy

---

an Open Access Journal  
by MDPI

---

Impact Factor 2.1  
CiteScore 4.9  
Indexed in PubMed



[mdpi.com/si/107389](https://mdpi.com/si/107389)

*Entropy*  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland  
Tel: +41 61 683 77 34  
[entropy@mdpi.com](mailto:entropy@mdpi.com)

[mdpi.com/journal/  
entropy](https://mdpi.com/journal/entropy)





# Entropy

---

an Open Access Journal  
by MDPI

---

Impact Factor 2.1  
CiteScore 4.9  
Indexed in PubMed



[mdpi.com/journal/  
entropy](https://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)