

Special Issue

Computational Physics and Artificial Neural Networks

Message from the Guest Editor

The Special Issue aims to bring together advances in special numerical methods together with new work in AI. A mathematical foundation is the basis on which special numerical methods are built, as well as that on which new types of neuromorphic software are designed (for instance, Kolmogorov–Arnold networks, Kohonen–SOM self-supervised classifiers, etc.). From the formulation of differential equations governing physical phenomena to the optimization algorithms that train neural networks, mathematics plays a crucial role in ensuring accuracy and efficiency. The articles featured in this issue highlight the use of linear algebra, calculus, probability, and statistical methods for improving performance in algorithmic and neuromorphic software. Key topics include the development of new mathematical techniques for reducing computational complexity, enhancing the stability of neural networks in dynamic simulations, and improving convergence rates in training algorithms.

Guest Editor

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Deadline for manuscript submissions

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About the Journal

Message from the Editor-in-Chief

The journal *Mathematics* publishes high-quality, refereed papers that treat both pure and applied mathematics. The journal highlights articles devoted to the mathematical treatment of questions arising in physics, chemistry, biology, statistics, finance, computer science, engineering and sociology, particularly those that stress analytical/algebraic aspects and novel problems and their solutions. One of the missions of the journal is to serve mathematicians and scientists through the prompt publication of significant advances in any branch of science and technology, and to provide a forum for the discussion of new scientific developments.

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manuscripts are peer-reviewed and a first decision is provided to authors approximately 17.3 days after submission; acceptance to publication is undertaken in 2.8 days (median values for papers published in this journal in the second half of 2025).