Special Issue

Mathematical and Computational Neuroscience

Message from the Guest Editors

Computational neuroscience is the extensive use of mathematical and physical theories and methods to construct mathematical models of the nervous system based on experimental observations. It seeks to give a statistical thermodynamic explanation of functions that emerge in the brain at multiple scales. There are several core questions arising here:

- What computational rules or physical principles do the brain circuit follow in the long-term evolution
- How does high-level intelligence emerge in this process? What are the inspirations for the new generation of artificial intelligence?
- What mathematical algorithms and physical mechanisms are used by the brain circuitry network in the realization of functions such as encoding, transmission, decoding, learning, and memory of sensory information?

Papers of both a theoretical and an applied nature are welcome, as well as original contributions regarding theories, methods, discoveries, and applications of computational neuroscience. Papers with mathematical analysis, modeling, neural coding or cognitive computation mechanisms, and practical applications related to AI are particularly welcome.

Guest Editors

Prof. Dr. Yuguo Yu

Prof. Dr. Si Wu

Prof. Dr. Wei Lin

Deadline for manuscript submissions

closed (31 August 2023)

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Mathematics

MDPI

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.

Editor-in-Chief

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