Special Issue

Exploring the NP-Complexity of Nature: Critical Phenomena, Chaos, Fractals, Graphs, Boson Sampling, Quantum Computing and More

Message from the Guest Editor

Tremendous recent progress in informational, computational, and quantum technologies has brought complex systems whose functionality is directly based on their NP/#P-complexity to the frontiers of modern science, research, and engineering. The modern stage in the development of the broad multidisciplinary area of research is characterized by a transition from the abstract general analysis and schemes to the invention, design, implementation, and application of the real NP/#P-complexity-based systems.

This Special Issue presents this recent advance in the theory of the NP/#P-complexity of nature, finding new models and systems that demonstrate or implement the NP/#P-complexity, developing analytic and computational methods for the analysis of such systems, as well as establishing connections and analogies between different complex systems.

Guest Editor

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Entropy

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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.
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