Mathematical Modelling of Complex Systems

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Message from the Guest Editors

Complex systems, defined as systems composed of a large number of interacting parts and characterized by non-linearity, adaptability, and dynamic changes, span various significant fields such as climatology, ecology, economics, social networks, cyber physical system, and biology. Due to their inherent characteristics, it is often challenging to accurately describe and predict complex systems using traditional mathematical and computational methods. Against this backdrop, AI technologies have become critically important in the study of complex systems. These AI algorithms themselves are examples of complex systems.

This Special Issue, "Mathematical Modelling of Complex Systems," aims to explore this two-way relationship, with a particular focus on research using mathematical modelling methods to aid AI technologies in the modelling and optimization of complex systems. We look forward to works that use mathematical tools from complex systems theory to understand and improve AI algorithms, as well as works that study complex systems from an AI perspective.

Special Issue