Special Issue

The Principle of Dynamical Criticality

Message from the Guest Editors

There are some major points which need to be addressed concerning the CP, including (but not limited to)

- understanding under which conditions (e.g., a changing external environment) dynamically critical states outperform ordered or disordered ones
- analyzing new biological systems to determine whether they do follow the principle
- refining the definition of criticality in the case of strongly non-ergodic systems, where it cannot be assumed that the system visits all of its possible states
- exploring the usefulness of the concept in artificial domains (e.g., in robotics or learning systems)
- building abstract models of the coevolution of a set of interacting systems to understand under which conditions they evolve towards criticality
- clinical implications of criticality, particularly for neurological disorders such as epilepsy and neurodegenarative disease, as well as anesthesia, sleep medicine and psychiatry

We will be particularly interested in papers dealing with
- the theory of criticality
- the role of criticality in biological systems
- the role of criticality in artificial systems
- clinical applications of criticality

Guest Editors

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Deadline for manuscript submissions

closed (17 December 2022)

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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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