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## Entropies, Information Geometry and Fluctuations in Non-equilibrium Systems II

Guest Editor:

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### Message from the Guest Editor

With the improvements in high-resolution data, fluctuations have emerged universally, playing a crucial role in many disciplines. Some fluctuations, such as tornados, stock market crashes, and eruptions in laboratory/astrophysical plasmas, are of a large amplitude and can have a significant impact even if they occur rarely. These large fluctuations are part of the very nature of non-equilibrium systems.

Associated with fluctuations is randomness in the statistical sense or dissipation in the thermodynamic sense. The concept of entropy has been used to quantify such fluctuations, constituting one of the cornerstone concepts in thermodynamic equilibrium. However, entropy in the conventional form has a limited utility in helping us to understand non-equilibrium systems. In particular, the information geometric method has emerged as a useful tool to help us to understand fluctuations in non-equilibrium systems.

This Special Issue aims to present different approaches to the description of fluctuations in non-equilibrium systems based on entropy and its variants (mutual entropy, relative entropy, etc.), as well as information geometry.



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# Special Issue



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## Editor-in-Chief

### **Prof. Dr. Kevin H. Knuth**

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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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