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Bayesian Inference and Mathematical Modeling in Complex Biological Systems

Guest Editor:

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Deadline for manuscript submissions:
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Message from the Guest Editor

The aim of this Special Issue is to highlight the use of Bayesian inference for the modeling of complex biological systems. Data pertaining to complex biological systems are typically noisy and the parameters of the mathematical models used to characterize these systems are subject to uncertainty. This Special Issue will highlight how mathematical modeling procedures endowed uncertainty quantification through Bayesian inference procedures can provide important tools in order to characterize the structure and further our understanding of complex biological systems in the face of uncertainty.

The topics of this Special Issue include but are not limited to:

- Bayesian inference in matrix and tensor-based decomposition methods for biological data;
- Bayesian inference for the modeling of complex biological networks;
- Bayesian inference for data fusion of complex biological data;
- Bayesian deep learning for the modeling of biological data;
- Bayesian model assessment in biological data modeling;
- Bayesian optimization in complex biological systems.

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Special Issue

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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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