Special Issue

Non-equilibrium Thermodynamics and Monte Carlo for Electronic and Electrochemical Processes

Message from the Guest Editor

One of the most powerful methods to capture stochastic processes is the Monte Carlo (MC) method. MC methods come in multiple flavors and allow for studying any system of interest based on state transition models. In particular in recent years, MC methods have been applied to study the dynamics of electro(-chemical) processes in order to gain insight into the importance of out-of-equilibrium properties.
This Special Issue aims to cover recent advances and present novel techniques for the usage of Monte Carlo methods in order to study out-of-equilibrium electronic and electrochemical processes at the nanoscale. In particular, the analysis of the charge and exciton dynamics in molecular electronics, as well as the reaction dynamics in electrochemical reaction networks, with the help of Monte Carlo methods, are scope of this Special Issue.

Guest Editor

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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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Editor-in-Chief

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