Special Issue

Monte Carlo Simulation in Statistical Physics

Message from the Guest Editors

Monte Carlo simulations are broad computational tools and techniques based on repeated random sampling to obtain numerical results related to problems such as numerical integration, optimization, and generating draws from a probability distribution. They are frequently employed in mathematical and physical systems in cases where the use of other approaches is impossible. Different strategies include modeling phenomena with significant input uncertainty, such as calculating risk in business and mathematics and evaluating multidimensional definite integrals with complicated boundary conditions. This Special Issue aims to showcase simulation of phenomena with significant uncertainty in inputs and systems with many coupled degrees of freedom that have applications in engineering, climate change, computational biology, artificial intelligence for games, applied statistics, and stochastic optimization, among other related topics.

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