Monte Carlo Simulation in Reactor Physics

Guest Editor:

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Message from the Guest Editor

Dear Colleagues,

The Monte Carlo method becomes increasingly important, especially in the critical analysis of initial core and shielding calculations. This is due to its advantages such as flexibility in geometry treatment, the ability to use continuous-energy pointwise cross sections, the ease of parallelization, and the high fidelity of simulations. Recently many new-generation Monte Carlo codes were developed, including MCNP6, OpenMC, MC21, SHIFT, TRIPOLI, Geant4, Spernt, MCCARD, MCS, RMC, SuperMC, JMCT, etc. These codes are aimed at achieving full core calculations and analyses with high fidelity and efficiency by means of advanced methodologies and algorithms as well as high-performance computing techniques.

This Special Issue will publish some of the most recent advances in the field of algorithms and technological developments in new-generation Monte Carlo codes. This volume will include some of the most recent as well as state-of-the-art methodologies, simulations, and applications on fission neutronics, fusion neutronics, particle transport, multi-physical coupling, shielding calculations, and high-performance computing.

Special Issue