Emmanuel Gull

University of Michigan, USA

Diagrammatic Monte Carlo for real-time propagation

We present a general introduction to Monte Carlo algorithms for solving impurity problems exposed to strong time-dependent variation of their parameters. We show several numerical approaches to Keldysh diagrammatics and present results for voltage quenches, interaction quenches, and time-dependent external fields. With these methods, non-equilibrium Monte Carlo methods are now at the point that they can be used as impurity solvers for dynamical mean field theory impurity problems, and we will show several applications of this method for equilibrium and non-equilibrium problems.