Universität Bielefeld Fakultät für Physik

# Seminar


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## Getting even with CLE: proofs, problems and results


In the landscape of approaches toward the simulation of Lattice Models with complex action the Complex Langevin Equation (CLE) appears as a straightforward method with a simple, well defined set up. Its applicability, however, is controlled by certain specific conditions which are not always satisfied, such as holomorphy and limited diffusion in the non-compact directions. We here discuss these conditions and the difficulties related with them as well as the procedures designed to meet them. We provide details about what the method can and did achieve, which are its present limitations and which are its prospects. We involve tests and insights from simple, solvable models and present results from lattice models, including QCD, especially concerning the attempt to explore the phase diagram of the latter at non-zero chemical potential. The present effort concerns reaching low temperature in finite density QCD and also simulations for real (Minkowski) time prolblems.

(Common work with G. Aarts, K. Boguslavski, M. Scherzer, E. Seiler and D. Sexty)


**Tuesday, 21.11.2017, 14:15 Uhr**
**Place: D6-135**