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The density of states approach to Lattice Gauge Theory

Thursday, 1 September 2016 15:00 (30 minutes)

The LLR method was recently proposed for numerical computations of continuous density of states. The density of states approach is particularly useful when dealing with meta-stabilities and for computing free-energies. In this talk I will review the method and discuss compact U(1) Lattice Gauge Theory, for which our algorithm has proved to be highly efficient and provided results that significantly improve upon the previous literature.

The method can also be applied to theories at finite density affected by the sign problem, reducing a high dimensional oscillatory integral to a one-dimensional one. I will discuss our results for the relativistic Bose gas.

Summary

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