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A global view of quantum computation with noisy components

Prof. Erik Aurell

时间：3月23日（星期四）15:00—16:30
地点：北京大学物理大楼中212教室

Abstract This talk is an attempt to estimate the error made in a general quantum computation by the Feynman-Vernon method. I will show how some simple estimates can be obtained for idealized systems, and more elaborate estimates for Kitaev's toric code interacting with a bosonic heat bath. One result is that such an interaction has only a very weak influence on the logical qubits in the Kitaev code; the errors normally considered in quantum computing is a much stronger effect.

The talk is mainly based on arXiv:1606.09407.

About speaker Erik Aurell is Professor of Theoretical Biological Physics at KTH Royal Institute of Technology in Stockholm, Sweden. He has worked on nonlinear dynamics, turbulence theory, biophysics and problems on the interface between statistical physics and computer science. He is a recipient of the CAS President's International Fellow Initiative 2016 award.

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