

Monday
June 16, 2025, 12:00 PM
Virtual Talk only!
Everyone is welcome!

Prof. Dr. Michael Kastoryano

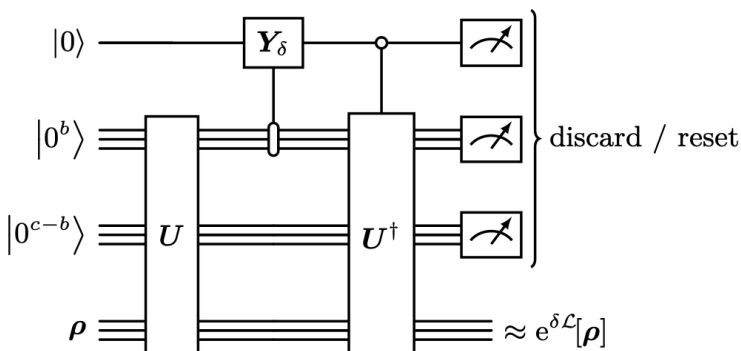
University Copenhagen and AWS

Quasi-local non-commutative Gibbs sampling

Monday, June 16th, 2025 at 12:00 PM

Virtual Talk: Contact the organizers if you want to join.

Despite extensive efforts to find useful quantum algorithms, we still lack a go-to method for simulating quantum equilibrium properties. For classical systems, the analogous problem of sampling from thermal distributions was addressed by Markov Chain Monte Carlo (MCMC) methods. In this talk, I will outline an efficient quantum algorithm for quantum thermal simulation exhibiting the key distinguishing features of MCMC: detailed balance, locality, and a direct connection to the open system dynamics of weak coupling to a Markovian thermal bath. We will show that the construction gives rise to a quasi-local Lindbladian, and we will show that some non-trivial new physics can already be seen in such systems.



From: Chen, Kastoryano, Brandao, Gilyen, arXiv:2303.18224

