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Variational principle for dissipative quantum systems

Dissipative quantum many-body systems are extremely challenging to analyze, as most theoretical tools developed for equilibrium systems cannot be applied. I will present the first steps towards a deeper understanding of these systems by introducing a variational principle for the non-equilibrium steady states of the quantum master equation describing the dynamics [1]. Finally, I will apply this approach to a dissipative extension of the Ising model, which is of importance to ongoing experiments on ultracold Rydberg atoms.

[1] H. Weimer, arXiv:1409.8307 (2014)

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