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Adiabatic Time Evolution and Quasi-Static Processes in Translation-Invariant Quantum Systems

jeudi 30 mai 2024 10:00 (55 minutes)

We study the slowly varying, non-autonomous dynamics of a translation-invariant quantum spin system on the lattice Z^d . This system is assumed to be initially in thermal equilibrium, and we consider realizations of quasi-static processes in the adiabatic limit. By combining the Gibbs variational principle with the notion of quantum weak Gibbs states, we establish a number of general structural results regarding such realizations. In particular, we show that such a quasi-static process is incompatible with the property of approach to equilibrium.
This is a joint work with V. Jaksic and C. Tauber.

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