

# Condensed Matter Theory Seminar

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## Equilibration towards generalized Gibbs ensembles in non-interacting theories

A highly important question in statistical mechanics is when do quantum systems equilibrate to thermal states and how long does it take? We will consider this question for systems that appear frequently as mean-field models in condensed matter physics: non-interacting lattice models of fermions (with straightforward extension to bosons). We will see that the translation invariance of the Hamiltonian and a finite correlation length of the (possibly non-Gaussian and non-translationally invariant) initial state is enough to make precise statements about the equilibration of the system towards a generalized Gibbs ensemble. In this case, the system will equilibrate quickly (according to a power-law in time) as long as there are no large scale inhomogeneities in the initial state. (See <https://arxiv.org/abs/1809.08268> for more details)

**Friday, 30.11.2018, 14:15 Uhr**  
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