

# **Extending the Principle of “Local Perturbations Perturb Locally” to “Non-equilibrium Almost-Stationary States”**

**An Introduction to Lattice Fermion Systems**

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For Hamiltonians with a unique gapped ground state it is often expected that a perturbation in one region does not influence the ground state in another region, if these regions are far apart. This idea is known as “local perturbations perturb locally” (LPPL).

In this talk I will introduce a mathematical model often used to describe lattice fermion systems. I then extend the known model to allow the characterization of local perturbations. Later we see results proving LPPL for “non-equilibrium almost stationary states” (NEASS) which will also be introduced.