

ÉCOLE D'ÉTÉ « MÉCANIQUE STATISTIQUE DE NON-ÉQUILIBRE »
01–29 JUILLET 2011

SUMMER SCHOOL ON “NON-EQUILIBRIUM STATISTICAL MECHANICS”
JULY 01–29, 2011

On adiabatic response theory in Markovian open systems

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I shall outline an adiabatic approach to the linear response theory in open systems. A direct generalization of a corresponding theory for a closed system faces conceptual problems with a definition of a (small) system itself – “Where the system ends and where the environment begins?”. I will show how this introduce ambiguity into the notion of a current (force, etc.) and proceed with bunch of examples.

To be more precise about the setting, I will consider a system in the Markovian approximation and study its evolution governed by a slowly driven Lindblad equation.

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