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A Dyson equation for non-equilibrium Green's functions in the partition-free setting

Horia Cornean*

cornean@math.aau.dk

We consider a small interacting sample coupled to several non-interacting leads. Initially, the system is at thermal equilibrium. At some instant t_0 the system is set into the so called partition-free transport scenario by turning on a bias on the leads. Using the theory of Volterra operators we rigorously formulate a Dyson equation for the retarded Green's function and we establish a closed formula for the associated proper interaction self-energy.

This is joint work with V. Moldoveanu (Bucharest) and C.-A. Pillet (Toulon).

^{*}Department of Mathematical Sciences, Aalborg University, Skjernvej 4A, DK-9220, Aalborg, DENMARK