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Heat transport in quantum systems with and without conformal invariance

Recently, conformal field theory (CFT) has been used to study isolated one-dimensional many-body systems out of equilibrium. In this talk I will present exact analytical results for heat transport in such systems described by CFT and by exactly solvable models with broken conformal invariance. Our methods allow us to obtain explicit results for the full time evolution starting from a large class of non-equilibrium initial states. This can be used to study in detail universal and non-universal properties of such systems at finite times and the way in which they tend to non-equilibrium steady states.

Based on works together with K. Gawedzki, E. Langmann, J. L. Lebowitz, and V. Mastropietro.