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JOHANNES GUTENBERG UNIVERSITÄT MAINZ

Theory of Condensed Matter: Hard Condensed Matter

Nov. 26, 2018 at 2 p.m.
Lorentz Room 05-127 (Staudingerweg 7)

Assa Auerbach
Department of Physics, Technion, Israel

Equilibrium Formulae for Transverse Magneto-transport of Strongly Correlated Metals

In metals, transport coefficients involve non-adiabatic relaxational dynamics which are in general, much harder to compute than equilibrium susceptibilities.
In this talk I present three formulas derived from Kubo formula [1], for DC transport coefficients which can be expressed as sums of equilibrium susceptibilities: (1) The Hall coefficient, (2) A modified Nernst coefficient, and (3) The Thermal Hall coefficient. The formulas are valid for general Hamitlonians and can treat bad metals where Boltzmann theory ceases to be valid. I show new results for the Hall coefficients of the square lattice t-J model, and of lattice bosons near the Mott insulator phases.
1. Hall Number of Strongly Correlated Metals, A. Auerbach, Phys. Rev. Lett. 121, 066601 (2018)

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