

Statistical Physics IV: Non-equilibrium statistical physics
ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE (EPFL)

Exercise No. 12

Solution: Dissipative coupling induced by a reservoir and emergence of dark and bright modes

For a full derivation see the paper by Tóth et al, “A dissipative quantum reservoir for microwave light using a mechanical oscillator”, Nat. Phys. (2017), or the LPQM Master Thesis by J. Stevens, “Theory and Design of Multimode Electromechanical Circuits” (2017).

Solution: Quantum reservoir engineering

Confer: Poyatos, Cirac and Zoller, “Quantum Reservoir Engineering with Laser Cooled Trapped Ions”, PRL 1996 for the theory and Kienzler et al., “Quantum harmonic oscillator state synthesis by reservoir engineering”, Science 2014 for the experimental realization.