Abstract: Hamiltonian formulations for lossy nonlinear quantum circuits are investigated. As an example for a nonlinear quantum circuit a DC biased Josephson junction connected to a resonator is treated and a circuit quantum electrodynamic representation is introduced. The DC bias is chosen such that a strong interaction of the nonlinear Josephson junction with two resonant modes occurs. The DC-biased nonlinear Josephson junction acts as a frequency converter and power exchange occurs between the two considered resonator modes and also between the resonator modes and the DC power supply. The thermal losses in the resonator are described by a heat bath and treated by the Langevin approach.
Occurences:

- Einrichtungen > Fakultäten > Fakultät für Elektrotechnik und Informationstechnik > Lehrstühle und Professuren > Nanoelektronik (Prof. Becherer komm.) > years > 2012

entries: