

**Abstract.** Gaussian (quasi-free) quantum Markov semigroups describe the quantum open system evolution of bosons under the Markovian approximation. Moreover, they generalize bosonic quadratic Hamiltonians because their formal GKLS generator has a quadratic Hamiltonian in bosonic annihilation and creation operators. In this talk we outline the construction of the semigroup and some properties of the Markovian dynamics such as irreducibility, ergodicity, existence of invariant states and the structure of the decoherence-free subalgebra in which the reduced evolution is homomorphic.