

Abstract Submitted
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On the quantum master equations for BCS-type quasiparticles

C.F. HUANG, CMS/ITRI, K.-N. HUANG, Institute of Atomic and Molecular Sciences, Academia Sinica — The quantum master equations are introduced for the density matrices of BCS-type quasiparticles, which may include both the particle-particle and particle-hole couplings. The constraints to relate the loss and gain factors are important to preserve the forms of the density matrices under such equations. These two factors describe not only the scattering where the number of quasiparticles are conserved, but also the creation and destruction of quasiparticles. The introduced equations can be reduced to the semiclassical master equations in the homogeneous limit.

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