On the quantum master equation for Bardeen-Cooper-Schrieffer pairing models C.F. HUANG, National Measurement Laboratory, Center for Measurement Standards, Industrial Technology Research Institute, Taiwan, R.O.C., K.-N. HUANG, (1) Department of Physics, National Taiwan University, Taiwan, R.O.C. (2) Institute of Atomic and Molecular Sciences, Academia Sinica, Taiwan, R.O.C — A master equation symmetric with respect to particles and holes has been introduced for systems composed of non-interacting identical fermions. [C. F. Huang and K. -N. Huang Chinese J. Phys. 42, 221 (2004); R. Gebauer R and R. Car R Phys. Rev. B 70, 125324 (2004).] Extensions to such an equation, in fact, can be obtained by incorporating two anti-hermitian terms for the lifetimes of particles and holes to construct the quantum relaxation term. In this poster, we focus on the extended equation for the interacting Fermi systems modeled by Bardeen- Cooper-Schrieffer (BCS) pairing theory. A constraint on the relaxation term is taken into account to preserve the pairing relation. Such a constraint, in fact, is also important when the coupling between quasiparticles and quasiholes is introduced to unify the BCS and antiferromagnetic/ferromagnetic models.

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