Quantum potential for confined charged particles in nonequilibrium[1] A. FROMM, M. BONITZ, University Kiel, J.W. DUFTY, University of Florida — The idea of treating quantum systems by semiclassical methods using effective quantum pair potentials (forces) has been successfully used in equilibrium by many authors, see e.g. [1] and refs. therein. Here, we extend this idea to quantum systems in an external field in nonequilibrium. Using nonequilibrium Green's functions techniques we derive a gauge-invariant equation of motion for an effective quantum potential which modifies an external confinement potential by quantum effects. This equation is solved by an iteration procedure. Results include the nonequilibrium spectral function and density of states of a weakly inhomogeneous electron system. [1] A. Filinov, V. Golubnychiy, M. Bonitz, W. Ebeling, and J.W. Dufty, Phys. Rev. E. 70, 046411 (2004) [2] M. Bonitz and J.W. Dufty, Cond. Matt. Phys. 7, 483 (2004)

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