Abstract Submitted
for the MAR17 Meeting of
The American Physical Society

Nonequilibrium diagrammatic technique for Hubbard Green functions[1] FENG CHEN, Department of Physics, University of California, San Diego, La Jolla, CA 92093, MAICOL OCHOA[2], MICHAEL GALPERIN, Department of Chemistry and Biochemistry, University of California, San Diego, CA 92093 — Utilizing many-body states of the isolated molecule, Hubbard nonequilibrium Green function (NEGF) is able to account for the intra-system interactions exactly while coupling to the contacts is treated perturbatively. We introduce nonequilibrium diagrammatic technique for the Hubbard NEGF, which allows building controlled approximations for both Green (two-time) and multi-time correlation functions. The formulation is an extension of equilibrium considerations for strongly correlated lattice models to nonequilibirum realm of current carrying molecular junctions. We demonstrate viability of the approach with numerical simulations for a generic junction model of quantum dot coupled to two electron reservoirs.

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Date submitted: 21 Sep 2016 Electronic form version 1.4