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GW electronic Correlations in Quantum Transport : Renormalization and finite lifetime effects on real systems PIERRE DARANCET, LEPES-CNRS and Université Joseph Fourier, Grenoble, ANDREA FERRETTI, Dipartimento di Fisica, Università di Modena e Reggio Emilia, and INFM-CNR-S3, National Center on nanoStructures and bioSystems at Surfaces, 41100, DIDIER MAYOU, VALERIO OLEVANO, LEPES-CNRS — We present an *ab initio* approach to electronic transport in nanoscale systems which includes electronic correlations through the GW approximation. With respect to Landauer approaches based on density-functional theory (DFT), we introduce a physical quasiparticle electronic-structure into a non-equilibrium Green's function theory framework. We use an equilibrium non-selfconsistent G^0W^0 self-energy considering both full non-hermiticity and dynamical effects. The method is applied to a real system, a gold mono-atomic chain. With respect to DFT results, the conductance profile is modified and reduced by to the introduction of diffusion and loss-of-coherence effects. The linear response conductance characteristic appear to be in agreement with experimental results.

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