Abstract Submitted
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Nonequilibrium Kondo physics in the Anderson impurity model: Auxiliary master equation approach[1] ANTONIUS DORDA, Graz University of Technology, MARTIN GANAHL, Perimeter Institute for Theoretical Physics, HANS GERD EVERTZ, WOLFGANG VON DER LINDEN, ENRICO ARRIGONI, Graz University of Technology — An accurate investigation of the evolution of the Kondo peak as a function of bias voltage is presented for the single impurity Anderson model (SIAM). We greatly enhance the capability of the recently introduced auxiliary master equation approach (AMEA) [1,2] by making use of matrix product states [3]. This allows us to obtain highly accurate spectral functions and observables for the SIAM at large values of the interaction and low temperatures T, well below the Kondo scale T_K. For $T \approx T_K/4$ and $T \approx T_K/10$ we find a clear splitting of the Kondo resonance into a two-peak structure at bias voltages just above T_K. A benchmark in the equilibrium case for $T \approx T_K/4$ reveals a remarkably close agreement to the numerical renormalization group. This, together with the high flexibility and the applicability to various problems such as dynamical mean field theory [1,4,5], demonstrates the great potential of AMEA for correlated systems, both in nonequilibrium as well as in equilibrium situations.

[1] E. Arrigoni et al., PRL 110, 086403 (2013)
[2] A. Dorda et al., PRB 89, 165105 (2014)
[3] A. Dorda et al., PRB 92, 125145 (2015)
[4] I. Titvinidze et al., arXiv:1508.02953
[5] A. Dorda et al., arXiv:1509.09255

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