A time-dependent mean field description of pump-probe ARPES
NEIL J. ROBINSON, JONATHAN D. RAMEAU, ROBERT M. KONIK, Brookhaven Natl Lab — We consider the problem of describing pump-probe ARPES experiments in the t-J model. Specifically, to compute the time-resolved ARPES intensity we combine a time-dependent generalization of slave boson mean field theory with the Schwinger-Keldysh formalism for computing the two-time Green's function. The pump field is treated through a Peierls substitution, under the assumption that it is not strong enough to excite to the upper Hubbard band, whilst the probe field is taken to be weak and treated under the sudden approximation. We compare our results to pump-probe ARPES experiments on $Bi_2Sr_2CaCu_2O_{8+\delta}$ (Bi2212).

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