

Abstract Submitted
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Optically Excited Graphene - Non - Equilibrium Many Body Theory REGINE FRANK, Institut für Theoretische Physik, Eberhard-Karls University Tübingen, Germany, ANDREAS LUBATSCH, Georg-Simon-Ohm University of Applied Sciences, Nürnberg, Germany — A generalized non-equilibrium dynamical mean field theory (DMFT) for graphene is presented. The NE-DMFT describes graphene in the presence of an external field coupling to the electrons and thus changing in a severe but controllable way the electronic properties of graphene. The non-equilibrium DMFT derives properties such as electronic density of states (LDOS) and occupation numbers of the optically driven system. It fully characterizes the system in its time dependent state. It is demonstrated, how such a setup may be employed in order to realize all-optical switching processes. Results for relevant time scales in setups as well as wave-mixing influences are presented.

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