Non-equilibrium DMFT - Polaritonics

ANDREAS LUBATSCH, Georg-Simon-Ohm Technical University of Applied Sciences, REGINE FRANK, Serin Physics Laboratory, E273 Department of Physics and Astronomy Rutgers University 136 Frelinghuysen Road Piscataway, NJ 08854-8019, USA — Non-equilibrium physics recently really becomes important with the progress of ultrafast laser sciences. However in our understanding there is still a gap between equilibrium physics and the non-equilibrium, even though numerical methods have been advanced in recent years. We compare in this talk novel results at hand with equilibrium physics. The comparison will show that especially theoretical efforts are needed to explain many - so far - unresolved problems and to predict novel research on the basis of ab initio computing. We specifically discuss several non-equilibrium extensions of DMFT, numerical methods as well as semi-analytical solvers.