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A Slave Spin Impurity Solver for Non Equilibrium Dynamical Mean Field Theory MARCO SCHIRO, Princeton Center for Theoretical Science and Department of Physics, Joseph Henry Laboratories, Princeton University, Princeton, NJ 08544 — The non equilibrium dynamics of strongly correlated electronic systems represents a challenging theoretical problem in condensed matter physics with applications ranging from pump probe experiments in correlated materials to dynamics in ultracold atomic gases. Dynamical Mean Field Theory (DMFT) has emerged in recent years as a powerful theoretical framework to deal with strong correlations in a non pertubative way. Its extension to the out of equilibrium case requires the solution of an auxiliary quantum impurity model in a non equilibrium bath. Here we present an impurity solver for Non Equilibrium DMFT based on a slave spin representation of the fermionic degrees of freedom. We apply this method to study the quench dynamics in the single band fermionic Hubbard model and compare the results with the time dependent Gutzwiller method.

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