

Abstract Submitted  
for the MAR10 Meeting of  
The American Physical Society

**Solving the dynamical mean field theory impurity problem with equations of motion and decoupling**<sup>1</sup> QINGGUO FENG, YU-ZHONG ZHANG, HARALD O. JESCHKE, Institut fuer Theoretische Physik, Universitaet Frankfurt — We address the need for efficient and reliable solutions to the effective Anderson impurity model in the context of dynamical mean field theory by developing a decoupling scheme for the single particle Greens function for finite interaction strength  $U$ . We solve the resulting closed system of integral equations by a method that combines iteration with genetic algorithms. The method is promising as the single band results for the Hubbard model compare well to numerically exact methods for insulating and metallic states. The possibility to extend the method to many orbitals is discussed.

<sup>1</sup>Research supported by the Emmy Noether Program of the Deutsche Forschungsgemeinschaft

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Date submitted: 18 Nov 2009

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