Abstract Submitted
for the MAR09 Meeting of
The American Physical Society

Mott-like behavior in the pseudogap region of the Hubbard model[1] DIMITRIOS GALANAKIS, Louisiana State Univ., KARLIS MIKELSONS, EHSAN KHATAMI, MARK JARRELL, Louisiana State Univ. and Univ. of Cincinnati, ALEXANDRU MACRIDIN, MICHAEL MA, Univ. of Cincinnati, JUANA MORENO, Louisiana State Univ. — We study the phase diagram of the two-dimensional Hubbard model using the Dynamical Cluster Approximation (DCA) in conjunction with the weak-coupling continuous time quantum Monte Carlo (CTQMC) as the cluster solver. We verify the existence of a quantum critical point at a finite electron doping which separates a fermi liquid region at low electron doping from the pseudogap region at high electron doping [2]. In the pseudogap region the double occupancy, the two particle correlation functions and spectra reveal a synergism between the development of moment formation and the appearance of short ranged order. We discuss the connection between our results and experiments.

[1]This work was supported by the National Science Foundation through OISE-0730290, DMR-0548011, and DMR-0706379.
[2]Vidhyadhiraja et. al., arXiv:0809.1477v1

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Date submitted: 21 Nov 2008 Electronic form version 1.4