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Mott-like behavior in the pseudogap region of the Hubbard model¹ 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.

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²Vidhyadhiraja et. al., arXiv:0809.1477v1

Prefer Oral Session
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Dimitrios Galanakis
galanakis@phys.lsu.edu
Louisiana State University

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