

Abstract Submitted
for the MAR06 Meeting of
The American Physical Society

Dynamical Mean Field Study of the Extended Hubbard Model ANDREW BALDWIN, University of California, in Davis, ALEXANDRU MACRIDIN, MARK JARRELL, University of Cincinnati, RICHARD SCALET-TAR, University of California, in Davis — The competition between on-site U and intersite V repulsion in the extended Hubbard model drives ground state phase transitions between spin density wave (sdw) and charge density wave (cdw) phases. While it was originally thought that in one dimension the sdw-cdw transition was first order at strong coupling and second order at weak coupling, it is now known that for small U and V a bond ordered wave phase intervenes. Here we present studies of the extended Hubbard model using the dynamical cluster approximation. We study the influence of V on the CDW and SDW transition temperatures, T_c and T_N . We find T_N is almost unmodified in the sdw region, even if $J = 4t^2/(U - V)$ is strongly modified. We also study the effect of V on the pairing interaction and the pseudogap.

Andrew Baldwin
University of California, in Davis

Date submitted: 30 Nov 2005

Electronic form version 1.4