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Dynamical Cluster Approximation Study of Ferromagnetism in the Periodic Anderson Model MUHAMMAD AZIZ MAJIDI, University of Cincinnati, MARK JARRELL, University of Cincinnati, JUANA MORENO, University of North Dakota, SUMITH DOLUWEERA, University of Cincinnati — The ferromagnetic phase in the strong coupling limit of the Periodic Anderson Model (PAM) is not fully understood. Previous studies using the Dynamical Mean Field Approximation (DMFA) (Tahvildar-Zadeh *et al.* (PRB **55**, R3332 (1997)) pointed to the importance of a ferromagnetic mechanism other than RKKY at conduction-band fillings near a quarter. This mechanism is related to the formation of a charge-density wave of the conduction electrons. However, it is questionable whether or not this effect persists when non-local correlations are incorporated into the theory. We try to answer this question by performing parametric studies on the phase diagram, the RKKY coupling, and the charge and spin susceptibilities for a three-dimensional system using the Dynamical Cluster Approximation (DCA).

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