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Effect of disorder on the electronic properties of strongly correlated systems within the dynamical cluster approximation¹ UNJONG YU, ABDOLMAJID NILI, JUANA MORENO, MARK JARRELL, Department of Physics and Astronomy, Louisiana State University — We study the interplay of disorder and strong correlations on the electronic properties of highly correlated systems. We employ the dynamical cluster approximation (DCA) to include the effects of short-range correlations and alloy disorder beyond the coherent potential approximation (CPA). Our study focus on the double exchange model, relevant on the study of dilute magnetic semiconductors, and the periodic Anderson model to study heavy fermion compounds. We present results of several electronic properties as function of disorder strength, alloy concentration, and electron or hole doping.

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