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Doping Dependence of the Structural and Magnetic Properties of $CeCu_{6-x}T_x$ (T = Ag, Pd) L. POUDEL, Univ of Tennessee, Knoxville and Oak Ridge National Laboratory, M.A. MCGUIRE, C. DE LA CRUZ, S. CALDER, A.F. MAY, W. TIAN, M. MATSUDA, H.B. CAO, T. HONG, A.E. PAYZANT, Oak Ridge National Laboratory, H. JEEN, Oak Ridge National Laboratory and Pusan National University, S. Korea, H.N. LEE, Oak Ridge National Laboratory, M. KOEHLER, H. ZHOU, V. KEPPENS, Univ. of Tennessee, Knoxville, D. MANDRUS, A.D. CHRISTIANSON, Univ. of Tennessee, Knoxville and Oak Ridge National Laboratory — $CeCu_{6-x}Au_x$ is a well-known heavy fermion system that exhibits an antiferromagnetic quantum critical point(QCP) at x $\sim$ 0.1. The end-member, $CeCu_6$ undergoes a structural transition, which is suppressed as Cu is partially substituted by Au in $CeCu_{6-x}Au_x$: the critical concentration being at x$\sim$0.1. This critical point occurs in close proximity to the antiferromagnetic QCP. Here, we study related systems, $CeCu_{6-x}Ag_x$ and $CeCu_{6-x}Pd_x$, to determine more globally the role of structural degrees of freedom in the observed critical behavior. For magnetically ordered compositions of $CeCu_{6-x}Ag_x$ and $CeCu_{6-x}Pd_x$, we find a long-range order with the wave-vector similar to that observed in $CeCu_{6-x}Au_x$. The structural transition temperature of $CeCu_{6-x}Ag_x$ decreases linearly with Ag concentration until the transition is completely suppressed at x$\sim$0.1. In contrast, moderate Pd-doping does not affect the structural transition, which is observed in $CeCu_{6-x}Pd_x$ with x $\leq$ 0.4.

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