**Erratum: Critical phenomena near the antiferromagnetic quantum critical point of heavy fermions
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In this paper, the wrong figures were printed. On the following page is a copy of page 6455 which includes the correct figures. The online version was corrected on 3 November 2000. This correction does not affect any of the results or discussion.

FIG. 1. Phase diagram in the plane (T, I) for dimension equal to 3. The shaded region represents the long-range antiferromagnetic phase bordered by the Néel temperature T_N . The unshaded region marks the magnetically-disordered regimes I, II, and III, associated to different behaviors of the system. Regime I is the quantum regime in which the energy of the relevant mode on the scale of ξ is much greater than $k_B T$. The magnetic correlation length is $\xi \sim 1/\sqrt{(1-I)}$ and the staggered spin susceptibility is $\chi'_Q = \chi'_{ff}(Q)/(1-I+aT^2)$. Regimes II and III are both classical regimes in which the thermal effects are important since the fluctuations on the scale of ξ have energy much smaller than $k_B T$. In Regime II, $\xi \sim 1/\sqrt{(1-I)}$ is still controlled by $(1-I)$ but the staggered spin susceptibility is sensitive to the thermal fluctuations: $\chi'_Q = \chi'_{ff}(Q)/(1-I+aT^{3/2})$. In Regime III, both ξ and χ'_Q are controlled by the temperature: $\xi \sim 1/T^{3/4}$ and $\chi'_Q = \chi'_{ff}(Q)/T^{3/2}$.

correlations. This would impose a description by a quantum critical theory with $d=3$, $z=2$. Recently Rosch *et al.*²⁸ proposed, on the basis of the neutron-scattering data in $\text{CeCu}_{6-x}\text{Au}_x$, that the critical magnetic fluctuations are two dimensional, which leads to a QCP with $d=2$ and $z=2$. Let us summarize the different regimes of behaviors that we get in each of those two cases ($z=2$, $d=3$ or 2) depending on the values of the temperature T and of the control parameter $I = J^2 \rho_{\alpha\alpha} \rho_{\beta\beta}$. As one can see, the results that we obtain are very similar to those established by Hertz²⁰ and Millis¹¹ us-

FIG. 2. Phase diagram in the plane (T, I) for dimension equal to 2. The shaded region represents the long-range antiferromagnetic phase bordered by the Néel temperature T_N . The unshaded region marks the magnetically-disordered regimes I and III. In that $d=2$ case, the equivalent of regime II in Fig. 1 is squeezed out of existence since $T_I = T_{II}$. Regime I is the quantum regime in which the thermal fluctuations are negligible: $\xi \sim 1/\sqrt{(1-I)}$ and $\chi'_Q = \chi'_{ff}(Q)/(1-I+aT^2)$. Regime III is the unique classical regime in which both the magnetic correlation length and the staggered spin susceptibility are controlled by the temperature: $\xi \sim 1/\sqrt{T \ln T}$ and $\chi'_Q = \chi'_{ff}(Q)/(T \ln T)$.

ing renormalization-group approaches in the spin-fluctuation theory.

(i) Case $d=3$. A long-range antiferromagnetic phase occurs when $I > 1$ below the Néel temperature $T_N \sim (I-1)^{2/3}$. A first crossover temperature $T_I \sim (1-I)$ separates the quantum from the classical regime. In the regime $I(I < 1)$ and $T < T_I$, the physics is quantum in the sense that the energy of the relevant mode on the scale of ξ is greater than the temperature $k_B T$. Since $d+z > 4$, the $T=0$ phase transition is above its upper critical dimension and the various physical quantities depend upon the parameter I . The magnetic correlation length diverges at the magnetic transition $\xi \sim 1/\sqrt{(1-I)}$ and the staggered spin susceptibility behaves as $\chi'_Q = \chi'_{ff}(Q)/(1-I+aT^2)$. Regimes II and III are both classical regimes characterized by large thermal effects since the fluctuations on the scale of ξ have energy much smaller than $k_B T$. In regime II [$T_I < T < T_{II}$ with $T_{II} \sim (1-I)^{2/3}$], the magnetic correlation length $\xi \sim 1/\sqrt{(1-I)}$ is still controlled by $(1-I)$ even though modes at the scale of ξ have energies less than $k_B T$. On the contrary, the staggered spin susceptibility is sensitive to the thermal fluctuations $\chi'_Q = \chi'_{ff}(Q)/(1-I+aT^{3/2})$. In regime III ($T > T_{II}$), the thermal dependence of physical quantities becomes universal and both ξ and χ'_Q are controlled by the temperature: $\xi \sim 1/T^{3/4}$ and $\chi'_Q = \chi'_{ff}(Q)/T^{3/2}$.

(ii) Case $d=2$. Then, since $z=2$, $z+d=4$ and the $T=0$ phase transition is at its upper critical dimension. The physics is qualitatively similar to the case $d=3$ with stronger fluctuation effects particularly in the classical regime. A long-range antiferromagnetic phase occurs when $I > 1$ below the Néel temperature $T_N \sim (I-1)$. For $d=2$, the two crossover temperatures T_I and T_{II} coincide so that regime II of Fig. 1 is squeezed out of existence. Regime I [$T < T_I$ with $T_I \sim (1-I)$] is the quantum regime in which the thermal fluctuations are negligible: $\xi \sim 1/\sqrt{(1-I)}$ and $\chi'_Q = \chi'_{ff}(Q)/(1-I+aT^2)$. Regime III ($T > T_I$) is the unique classical regime characterized by very strong fluctuation effects since $k_B T$ is larger than the energy of the relevant mode on the scale of ξ . Both the magnetic correlation length and the staggered spin susceptibility are then controlled by the temperature: $\xi \sim 1/\sqrt{T \ln T}$ and $\chi'_Q = \chi'_{ff}(Q)/(T \ln T)$.

VI. CONCLUDING REMARKS

We considered the $S=1/2$ Kondo lattice model in a self-consistent one-loop approximation starting from a generalized Hubbard-Stratonovich transformation of the Kondo interaction term. The model exhibits a zero-temperature magnetic phase transition at a critical value of the Kondo coupling. The transition is usually antiferromagnetic but it may be incommensurate depending on the band structure considered. The low-temperature physics is controlled by a collective mode that softens at the antiferromagnetic transition with a dynamic exponent z equal to 2.

A quantum-classical crossover occurs at a temperature T_I related to the characteristic energy scale of that mode. Heavy-fermion systems are usually believed to be three-dimensional. However, since some recent inelastic-neutron scattering experiments performed in $\text{CeCu}_{6-x}\text{Au}_x$ show that