ERRATA

Erratum: Diagram technique and gas approximation in the Hubbard model [Sov. Phys. JETP 43, 574–579 (1976)]

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1. At a concentration close to unity, the amplitude for magnon scattering by holes was calculated in the Born approximation. If we replace the Born amplitude by the exact amplitude, i.e., solve the Bethe–Salpeter equation for the scattering of a magnon by a hole, then the diagram method yields the same result as the Nagaoka theory. For fcc and hcp lattices, we can proceed further and find the critical concentration c_0, starting with which the ferromagnetic phase becomes unstable, $1 - c_0 = a \exp(-\pi^2/4)$ (a is a constant on the order of unity).

2. The density of states $m p_0/2\pi^2$ used in the ferromagnetic condition (formula (36)) should be replaced in the case of bcc and fcc lattices by $p_0/8t\pi^2$ and $p_0/16t\pi^2$, since the volume of the unit cell is, respectively, $\frac{1}{2}$ and $\frac{1}{4}$ of the unit cell of the primitive cubic lattice. As a result, despite the increase in the number of nearest neighbors, the critical concentration is large because of the strong decrease of the density of state, and ferromagnetism in the gas phase is impossible.