
ERRATA

Erratum: Field-induced gap in Cu benzoate and other $S = \frac{1}{2}$ antiferromagnetic chains
[Phys. Rev. B 60, 1038 (1999)]

Ian Affleck and Masaki Oshikawa

An error was made in going from Eq. (5.12) to (5.13). Consequently, the definition of A_0 in Eq. (5.5) should be changed to

$$\frac{\Delta}{J} \rightarrow A_0 \left(\frac{h}{J}\right)^{2/3} \ln^{1/6}\left(\frac{J}{\Delta}\right) \approx A_0 \left(\frac{2}{3}\right)^{2/3} \left(\frac{h}{J}\right)^{2/3} \ln^{1/6}\left(\frac{J}{h}\right). \quad (1)$$

Similarly, the definition of D_0 in Eq. (8.14) should be changed to

$$m_s \rightarrow D_0 (h/J)^{1/3} \left[\ln \frac{J}{\Delta} \right]^{1/3} \approx D_0 (2/3)^{1/3} (h/J)^{1/3} \left[\ln \frac{J}{h} \right]^{1/3}. \quad (2)$$

Incorrect statements were made about the regimes of uniform and staggered fields where the gap formulas of Eqs. (5.4) [using Eq. (5.6)] and Eq. (5.5) apply. The correct conditions are most easily stated in terms of J , H , and Δ . Equation (5.5) is valid when

$$H \leq \Delta \ll J. \quad (3)$$

Much of the experimental data is in this regime which, in particular, always occurs at small enough H . Equation (5.4) [using Eq. (5.6)] applies when

$$\Delta \leq H \ll J. \quad (4)$$

The experiments can get into this regime by choosing a field direction so that $h/H \ll 1$. The two expressions can be shown to agree at $\Delta \approx H$. None of these corrections has a significant effect on our data fitting.

We would like to thank R. Feyherm for his assistance in discovering and correcting these errors.