

# Erratum: Composite Spin and Quadrupole Wave in the Ordered Phase of $\text{ Tb}_{2+x}\text{ Ti}_{2-x}\text{ O}_{7+y}$ [SPIN 5, 1540003 (2015)]

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We have become aware of an error in Eq. (1) in the published paper. It should read

$$|\pm 1\rangle_{\text{D}} = A|\mp 4\rangle \pm B|\mp 1\rangle + C|\pm 2\rangle \mp D|\pm 5\rangle .$$

This is an exchange of the ground doublet states  $|\pm 1\rangle_{\text{D}}$ , which is needed to use the same phases  $\phi_{\mathbf{r},\mathbf{r}'}$  of Eq. (13) as those of Ref. [1]. It affects six signs of Eqs. (6) and (7) as follows:

$$J_x = J_y = 0, \quad J_z = -(4A^2 + B^2 - 2C^2 - 5D^2)\sigma^z = -3.40\sigma^z ,$$

and

$$\begin{aligned} \frac{1}{2}[3J_z^2 - J(J+1)] &= 3A^2 - \frac{39}{2}B^2 - 15C^2 + \frac{33}{2}D^2 = 3.05 , \\ \frac{\sqrt{3}}{2}[J_x^2 - J_y^2] &= \left(-\frac{21\sqrt{3}}{2}B^2 + 9\sqrt{10}AC\right)\sigma^x = 3.00\sigma^x , \\ \frac{\sqrt{3}}{2}[J_xJ_y + J_yJ_x] &= -\left(-\frac{21\sqrt{3}}{2}B^2 + 9\sqrt{10}AC\right)\sigma^y = -3.00\sigma^y , \\ \frac{\sqrt{3}}{2}[J_zJ_x + J_xJ_z] &= -\left(3\sqrt{30}BC + 9\sqrt{\frac{33}{2}}AD\right)\sigma^x = -8.16\sigma^x , \\ \frac{\sqrt{3}}{2}[J_yJ_z + J_zJ_y] &= -\left(3\sqrt{30}BC + 9\sqrt{\frac{33}{2}}AD\right)\sigma^y = -8.16\sigma^y . \end{aligned}$$

These errors do not affect any other results and conclusions of the paper.

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[1] S. Onoda and Y. Tanaka, Phys. Rev. B 83, 094411 (2011).