

Errata

- page 48, Equation (3.14): Replace ‘ γ_i^2 ’ by ‘ γ_s^2 ’ on the right hand side of the first line.
- page 58, after Equation (3.56): delete line ‘where we define ... the principal axes of the g -tensor.’
- page 63, Equation (3.69): replace right hand side by

$$\frac{1}{I} \frac{\text{Tr}\{\rho I_z^k\}}{\text{Tr}\{\rho\}}.$$

- page 64, Equation (3.72): replace sum over N_s by sum over N_I .
- page 88, Equation (4.44): replace $g_{ss}(\omega_s^i - \omega)$ by $g_{ss}(\omega - \omega_s^i)$.
- Page 94, line 30: replace ‘Provotorov’s expression (4.62)’ by ‘Provotorov’s expression (4.65)’.
- Page 94 and 95: Replace Equations (4.66), (4.67) and (4.69) by

$$P_S(\omega) = P_S(\omega_0) + \sum_{n=1}^{\infty} \frac{1}{n!} \left(\frac{\partial^n P_S(\omega)}{\partial \beta_{\text{NZ}}^n} \right)_{\omega=\omega_0} \beta_{\text{NZ}}^n$$

$$P_S(\omega) \approx P_S(\omega_0) + \left(\frac{\partial P_S(\omega)}{\partial \beta_{\text{NZ}}} \right)_{\omega=\omega_0} \beta_{\text{NZ}}$$

$$\left(\frac{\partial P_S(\omega)}{\partial \beta_{\text{NZ}}} \right)_{\omega=\omega_0} = \frac{1}{2}(\omega - \omega_0) \left(\frac{\partial \tanh x}{\partial x} \right)_{x=\frac{1}{2}\omega_0\alpha} = \frac{1}{2}(\omega - \omega_0) [1 - \tanh^2(\frac{1}{2}\omega_0\alpha)]$$

- Page 96: replace Equation (4.74) by

$$U = -\frac{1}{2}\hbar N_S \int_{-\infty}^{\infty} d\omega \omega g(\omega) P_S(\omega)$$

$$= -\frac{1}{2}\hbar N_S \left[\omega_0 P_S \int_{-\infty}^{\infty} d\omega g(\omega) + P_S \int_{-\infty}^{\infty} d\omega (\omega - \omega_0) g(\omega) \right.$$

$$+ \frac{1}{2}\omega_0 (1 - P_S^2) \beta_{\text{NZ}} \int_{-\infty}^{\infty} d\omega (\omega - \omega_0) g(\omega)$$

$$\left. + \frac{1}{2}(1 - P_S^2) \beta_{\text{NZ}} \int_{-\infty}^{\infty} d\omega (\omega - \omega_0)^2 g(\omega) \right]$$

$$= -\hbar N_S \left[\frac{1}{2}\omega_0 P_S + \frac{1}{4}D^2 (1 - P_S^2) \beta_{\text{NZ}} \right].$$

- Page 102, Equation (4.100): Invert sign of right hand side, so

$$\beta_{\infty} = -\frac{\omega_0(\omega_m - \omega_0) - D^2}{D^2 + (\omega_m - \omega_0)^2} \beta_0 \approx -\frac{\omega_0(\omega_m - \omega_0)}{D^2 + (\omega_m - \omega_0)^2} \beta_0$$

- Page 115, Figure 5.3: replace σ_{\pm} by S_{\pm} .
- Page 141, line 6 to 14: A more general definition of the cross effect is provided in *Addendum A: The Cross Effect*.
- Page 146, line 12: replace $\omega_{\text{eff}} \cos \theta = \omega_S - \omega_{\text{ph}}$ by $\omega_{\text{eff}} \cos \theta = \omega_S - \omega_m$.
- page 156, Equation (6.56): add factor \hbar on the right hand side.
- page 157, Equation (6.60): replace Δ_S by $\omega_S^i - \omega_S^j$ and D_{+-} by D_{+-}^{ij} .
- page 165, Equation (6.90): Replace $\overline{W_h^+}$ by $\overline{W_h^{\pm}}$.
- page 166, Equation (6.91): Replace $\frac{N_S A^2}{N_I \omega_{0I}^2}$ by $\frac{A^2}{N_I \omega_{0I}^2}$.
- page 208: Replace $\frac{1}{2}\pi$ by π in Equation (8.54).
- page 209: Replace Equation (8.60) by

$$\omega_{0I} \beta_I = \omega \beta_S(\omega) - (\omega - \omega_{0I}) \beta_S(\omega - \omega_{0I})$$

- page 211: Replace $\frac{1}{2}\pi$ by π in Equation (8.67) and (8.68).
 - page 215: Replace $\frac{1}{4}\pi$ by $\frac{1}{2}\pi$ in Equation (8.83) and (8.84).
 - page 219: Replace $\frac{1}{2}\pi$ by π in Equation (8.86).
 - page 220: Replace Equation (8.87) by
- $$\frac{\tau_{\mathcal{D}}}{\tau_{\text{SSI}}} \approx \frac{A^2}{4M_2^0(1-P_S^2)} \frac{g(\omega_0 + \omega_{0I})}{g(\omega_0)} = \frac{3M_2^A}{8M_2^0(1-P_S^2)} \frac{g(\omega_0 + \omega_{0I})}{g(\omega_0)},$$
- page 221, below Equation (8.92): Replace ‘but the rate of triple spin flips is faster than the rate at which spectral diffusion spreads saturation across the full ESR spectrum.’ by ‘but the rate of triple spin flips is faster than the rate of direct nuclear spin-lattice relaxation.’
 - page 221 to page 222, line 17: Notice that Equation (8.94) only applies, if the hole in the ESR signal is very narrow. A more elaborate treatment, also valid for wider holes, is given in *Addendum A: The Cross Effect*.
 - page 229, Figure 8.11: Replace the C–O• group by N–O•.
 - page 231 to 233: A more elaborate treatment of the subject is provided in *Addendum A: The Cross Effect*.
 - page 232, line 2: Replace ‘flop-flop’ by ‘flip-flop’.
 - page 232: Replace $\frac{1}{2}\pi$ by π in Equation (8.120).
 - page 233, Equation (8.124): Invert sign of right hand side and replace $\frac{1}{2}\pi$ by π .