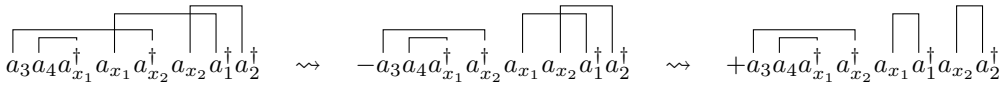
Phenomenology of Particle Physics
Errata (20/2/23)

1. **p. 298**: Eq. (9.197), one should read:



$$a_3 a_4 a^\dagger_{x_1} a_{x_1} a^\dagger_{x_2} a_{x_2} a^\dagger_1 a^\dagger_2 \quad \rightsquigarrow \quad -a_3 a_4 a^\dagger_{x_1} a^\dagger_{x_2} a_{x_1} a_{x_2} a^\dagger_1 a^\dagger_2 \quad \rightsquigarrow \quad +a_3 a_4 a^\dagger_{x_1} a^\dagger_{x_2} a_{x_1} a^\dagger_1 a_{x_2} a^\dagger_2 \tag{1}$$

2. **p. 301**: Ex. 9.2, point c, one should read:

   (c) $\pi^+\pi^- \to \pi^0\pi^0$ and $\pi^0\pi^0 \to \pi^+\pi^-$

3. **p. 389**: Eq. (11.295), one should read:

$$\frac{ie^2}{q^2}\bar{v}(p')\gamma_\mu(k_- - k_+)^\mu u(p) \tag{2}$$

   where $q^\mu = k_- + k_+$.

4. **p. 444**: In point 3, one should read “magnetron frequency” instead of “magneton frequency”.

5. **p. 463**: Equation (14.123) should read $\vec{E}(x,y,z) = -\frac{V_0}{r_0^2}\,(x,y,-2z)$ instead of $\vec{E}(x,y,z) = \frac{V_0}{r_0^2}\,(x,y,-2z)$.

6. **p. 463**: Accordingly, equation (14.124) should also have a minus sign in front of the first term:

$$\begin{pmatrix} \ddot{x} \\ \ddot{y} \\ \ddot{z} \end{pmatrix} = -\frac{eV_0}{mr_0^2}\begin{pmatrix} x \\ y \\ -2z \end{pmatrix} + \omega_0 \begin{pmatrix} \dot{y} \\ -\dot{x} \\ 0 \end{pmatrix} \tag{3}$$

7. **p. 551**: Ex 17.3, point c, one should read $\sin\theta = 1/\sqrt{3}$ instead of $\theta = 1/\sqrt{3}$.

8. **p. 814**: Eq. (26.91) should read $\sigma(e^+e^- \to Z^0 \to \ell^+\ell^-) = ...$ instead of $\sigma(e^+e^+ \to Z^0 \to \ell^+\ell^-) = ...$

9. **p. 814**: Eq. (26.93), same

10. **p. 814**: Eq. (26.94), same

11. **p. 994**: Appendix A.13, the first sentence should refer to “Gauss’s theorem” instead of “Stokes’s theorem”.