# Errata

1. eq. (2.36): $\sinh(\tilde{\omega}\hat{q}) \to \sinh(\tilde{\omega})\,\hat{q}$
2. eqs. (2.153) – (2.155): $\varphi_{\mathbf{x}-\mathbf{y}} \to \varphi_{\mathbf{y}-\mathbf{x}}$
3. footnote p. 32: Merwin → Mermin
4. figure 3.6 on p. 43: reverse lower arrow
5. eq. (3.87): $n+8 \to 1$
6. below eq. (3.121) on p. 52: $n^4 \to n^2$
7. eq. (2.33): the matrix on the right hand side should be replaced by its transpose. In the sentence below (2.34): $(\kappa, \lambda) \to (\lambda, \kappa)$.
8. eq. (3.194): $(k+1)Z_k(\lambda) \to (k+1)\lambda\, Z_{k+1}(\lambda)$
   eqs. (3.195) and (3.196): $Z_1(\lambda) \to \lambda\, Z_1(\lambda)$
9. eq. (4.49): $[D_\mu, D_\nu] \to i[D_\mu, D_\nu]$
10. eq. (4.59): $C'_{\mu x}\psi_{x+a\hat{\mu}} \to C'_{\mu x}\psi'_{x+a\hat{\mu}}$, $\psi'_x 0 \to \psi'_x$)
11. eq. (4.93): $g_{kl} \to g_{kl}(\alpha)$, $g_{mn} \to g'_{mn}(\alpha')$. Here $g'_{mn}$ is the metric in the new coordinate frame; $\alpha$ and $\alpha'$ denote the same $U$.
12. The expressions in (4.76) are confusing. The order of labels $n$ in the first line is reversed with respect to the last line. Let us replace the first line using the label ordering of the last line (with $z_0 = x$, $z_N = y$):

$$\begin{aligned} U(C_{xy}) &= \lim_{N\to\infty} \exp\left[-i\int_x^{z_1} dz_\lambda\, G_\lambda(z)\right] \cdots \exp\left[-i\int_{z_n}^{z_{n+1}} dz_\mu\, G_\mu(z)\right] \\ &\quad \cdots \exp\left[-i\int_{z_{N-1}}^{y} dz_\nu\, G_\nu(z)\right] \end{aligned}$$

   (for clarity we avoided here repeated use of the dummy index $\mu$). For infinitesimal four-vectors $dz_{n\mu} = (z_{n+1} - z_n)_\mu$ the integrals simplify like

$$\exp\left[-i\int_{z_n}^{z_{n+1}} dz_\mu\, G_\mu(z)\right] = \exp\left[-i dz_{n\mu} G_\mu(z_n)\right] = 1 - i dz_{n\mu} G_\mu(z_n)\,,$$

   which gives the last line of (4.76).
13. In eq. (4.216): $a_0 \to c_0$. Here $r = 0$ denotes the trivial one-dimensional representation $U \to 1$ (the number 1 ), $d_0 \to 1$ (cf. (4.159) for general $c_r$).
14. eq. (5.10), second line: insert $\sum_{y_4=-\infty}^{\infty}$ before integration symbol

15. between (5.67) and (5.68): $2d$ plaquettes $\rightarrow 2(d-1)$ plaquettes

16. eq. (5.75): $k \rightarrow r$

17. eq. (5.134): $S_A \rightarrow S$ (with $S$ given in (5.133))

18. eq. (6.64): $\gamma^x \gamma_\mu (\gamma^{x+\hat{\mu}})^\dagger \rightarrow (\gamma^{x+\hat{\mu}})^\dagger \gamma_\mu \gamma^x$

19. p. 180, second paragraph, last line: Yet, as we have seen in section (5.6) $\rightarrow$ Yet, as we have seen in figure 5.24

20. p. 183, 5th line from the bottom, $\kappa_{\rm crit} \rightarrow \kappa_{\rm c}$

21. section 7.6, end of first paragraph: $m_K^0 \rightarrow m_{K^0}$

22. p. 189, bottom: problem (iv) $\rightarrow$ problem (iii)

23. p. 208, first footnote: contact $\rightarrow$ contact terms

More corrections as per 13-2-2022

- p. 41 below eq. (3.49): in the above expectation values. $\rightarrow$ in the above expectation values, defined in general by (3.42).

- eq. (5.20): omit on the righthand side: $\rightarrow \infty$,

- eq. (5.85): $\frac{1}{t} \ln W(r,t) \rightarrow -\frac{1}{t} \ln W(r,t)$

- between (6.36) and (6.38): $\sin^4 k_4 \rightarrow \sin^2 k_4$; the other poles $\rightarrow$ the poles

- p. 156: brief review $\rightarrow$ brief introduction

- eq. (B.10): $\delta_{pq}\delta(\mathbf{x}-\mathbf{y}) \rightarrow i\delta_{pq}\delta(\mathbf{x}-\mathbf{y})$

- below (D.27): conjugates of $\psi$ and $\bar{\psi} \rightarrow$ conjugates of $\bar{\psi}$ and $\psi$

- p. 258: $\pi(135)$, $\pi(135) \rightarrow \pi(135)$