

## Errata: QFT and CMT

I am grateful to Ben Strekha for bringing the following to my attention.  
Important errata in **boldface**

Chapter 1

page 6, equation (1.41) shouldn't have a  $T$  in the denominator

page 9, 3 lines below equation (1.58),  $d = 3N - 1 \simeq 3N \rightarrow d - 1 = 3N - 1 \simeq 3N$   
**page 16**, Equation (1.120)

$$\sum_i p_i dE_i = \sum_i \frac{dE_i}{dV} dV$$

(is currently missing a  $dV$  in the numerator on the right hand side).

Chapter 2

**page 23**, equation (2.23) and (2.24)  $dh \rightarrow \partial h$  and  $d^2h \rightarrow \partial^2h$  in the denominators  
page 24, equation (2.25):

$$E = -J \sum_{i=0}^{N-1} s_i s_{i+1}$$

(currently missing the  $i = 0$  in the limit of the sum)

page 25, equation (2.28) the right hand side lower limit on sum:  $t_i = \pm \rightarrow t_i = \pm 1$

Chapter 3

page 31, second line.  $U(x, x' : t) \rightarrow U(x, x'; t)$

page 32, equation (3.22) should have an index  $n$  for the sum:

$$U(\tau) = \sum_n |n\rangle \langle n| e^{-\frac{1}{\hbar} E_n \tau}$$

page 37, equation (3.58).

$$\langle s_i \rangle = \langle 0 | \sigma_3 | 0 \rangle = \langle s \rangle$$

**page 38**, in the sentence continuing after (3.60)  $\exp(2K^*) \rightarrow \exp(-2K^*)$ .

Chapter 5

page 57, equation (5.24)  $\exp(-iS_c/\hbar) \rightarrow \exp(iS_c/\hbar)$ .

Chapter 6

page 73, equation (6.2) drop the comma in  $|\theta, \phi \rangle$

page 89, equation (6.118) drop the vertical bar in  $e^{-\beta H} | \dots$

page 90, equation (6.127)  $\Psi(0) (\rightarrow (\Psi(0))$ .

**page 92**, equation (6.142):

$$G(\omega_n) = -\frac{1}{\beta} \int_0^\beta e^{i\omega_n \tau} e^{-(\Omega_0 - \mu)\tau} (1 - n_F(\Omega_0 - \mu)) d\tau$$

(currently  $d\tau$  is missing the integration measure  $d\tau$ ).

**page 96**, equation (6.176)

$$\int_{-\infty}^{\infty} e^{-\frac{1}{2}mx^2 + Jx} dx = \sqrt{\frac{2\pi}{m}} \exp\left[\frac{J^2}{2m}\right].$$

(currently is missing the integration measure  $dx$ )

Chapter 10

page 145: eq. 9.15:  $(\lambda - 1) \rightarrow \lambda$

page 151, eq. 9.56:  $\sum_{i,j=1}$

page 160, equation (10.18) is missing an "=" sign after lim

**page 162** Eqn. 10.27, the right hand side should be  $+\frac{1}{2\pi} \ln |\mathbf{r} - \mathbf{r}'|$ .

**page 165**, equation (10.36)  $e^S(s) \rightarrow e^{S(s)}$

page 167, second to last paragraph before 10.2.3  $t_i = s_1 s_{i+1} \rightarrow t_i = s_i s_{i+1}$ .

Chapter 11

**page 173** Eqn. 10.61 RHS should read  $= \sum_{\alpha} g_{\alpha} \langle i | \mathcal{O} | j \rangle$ .

**page 190**, equation (11.44), exponent on right hand side:  $K'(s_0 s_1 + \dots) \rightarrow K'(s_1 s_2 + \dots)$

**page 194**, Figure 11.3 second  $K^* + \Delta K$  should be  $K^* + \Delta K'$

Chapter 12

**page 205**, equation (12.36)  $3u_0 \rightarrow 4u_0$ .

Chapter 13 page 226, equation (13.11)  $S_0^*(\phi_f) \rightarrow S^*(\phi_f)$

page 226, equation (13.15) drop the comma after  $\phi$

page 226, equations (13.17) and (13.18)  $\mathbf{s} \rightarrow s$ .

**page 230**, equation (13.44)  $u_0 \rightarrow \frac{u_0}{(2!2!)}$ .

page 232, equation (13.53)  $u_0) \rightarrow u_0$

**page 235** before equation (13.76) "the  $u_0$  term in Eq. (13.66)"  $\rightarrow$  the " $u_0$  term in (13.67)".

page 237, equation (13.93) in the argument of  $\phi'$ ,  $0/s \rightarrow 0 \cdot s$ .

page 240, equation (13.111)  $t \rightarrow |t|$ .

**page 243**, equation (13.134)

$$\frac{du_0}{dl} = (4 - d)u_0 + \mathcal{O}(u_0^2) = \varepsilon u_0 + \mathcal{O}(u_0^2)$$

page 249, equation (3.157), (13.161), (13.162): need = sign after limits:

$$u(t) \lim_{t \rightarrow \infty} = \frac{1}{bl}$$

$$r_0(l) \lim_{l \rightarrow \infty} = -\frac{a}{2bl}$$

$$u_0(l) \lim_{l \rightarrow \infty} = \frac{1}{bl}$$

Chapter 14

page 259, right after equation (14.51)  $\mathfrak{l}_0^2 \rightarrow \lambda_0^2$

page 260, equation (14.52) and a sentence between (14.52) and (14.53)  $\mathfrak{l}_0^2 \rightarrow \lambda_0^2$ .

page 260, after equation (14.53)  $\mathfrak{l}_0^2 \rightarrow \lambda_0^2$

**page 260**, equation (14.54)  $\lambda^2 \rightarrow -\lambda^2$

page 261, equation (14.60)  $B(m_0^2 \rightarrow B(m_0 \dots), \dots)$  and in the mini-paragraph following (14.60).

page 261, equation (14.61) and (14.62)  $\mathfrak{l}_0^2 \rightarrow \lambda_0^2$

page 277, on (14.113) ,  $d \rightarrow \partial$ , in the next line  $\partial \rightarrow d$

Chapter 15

**page 287**, equation (15.12)  $e_2 \rightarrow \varepsilon_2$ .

**page 292**In the RHS  $\int_0^\pi \rightarrow \frac{1}{2\pi\delta(0)} \int_0^\pi$

Chapter 16, page 306, last paragraph: “could” repeated

Chapter 17 **page 321**, equation ((17.11)  $\exp(ipx) \rightarrow \exp(-ipx)$

page 332, equation (17.102)

$$\dots = \frac{1}{2} [(\partial_\tau \phi)^2 + (\partial_x \phi)^2],$$

(currently is missing a ”(” on the x-derivative term.)

**page 314** Eqn. 16.38 should read  $\chi = \frac{\chi_0}{1+F_0\chi_0}$

**page 329**, equation (17.76)  $\phi_+^2 \rightarrow \phi_+^2(0)$ .

**page 360** equation 18.168  $\delta \rightarrow \sqrt{\delta}$  within arctan.

**page 360** LINE ABOVE equation 18.171:

What if we start *on* the line  $x = -y$ ?