List of misprints and minor corrections for
"Gauge Theories in Particle Physics", Third Edition, volume 1:
"From Relativistic Quantum Mechanics to QED"

pxvi line 9 of first paragraph replace 'benefitted' by 'benefited'; lines 3-6 of third paragraph: please note that the book's website listed here, and the e-mail, are no longer operational; all communication of queries, errors, etc should be to i.aitchison1@physics.ox.ac.uk

p6 line 4 from the bottom of the page replace 'atoms' by 'electrons'; line 3 from the bottom of the page replace 'scattering' by 'scattered'

p25 line 9 from the bottom of page replace 'DO' by 'D0'; lines 4 and 5 from the bottom of the page replace 'u, d and s' by 'd, s and b'

p26 first line replace '(u, d, s)' by '(d, s, b)'

p39 in equation (2.21) replace '$(300\ \text{GeV})^{-2}$' by '$(300\ \text{GeV})^{2}$'

p49 in the first line of problem 2.2 replace '$(E/c, p)$' by '$(E/c, \boldsymbol{p})$'; last line of the page replace '$q^2 = -4EE' \sin\theta/2$' by '$q^2c^2 = -4EE' \sin^2\theta/2$'

p52 the numerators in equations (2.27) and (2.28) should include a minus sign: '$-m_1 m_2 G_{\mathrm{N},3+d}$'

p58 in equation (3.23) replace 'j^{μ}_{em}' by 'j^{ν}_{em}'

p60 in the first sentence of the paragraph following equation (3.29) replace 'The solution of' by 'The solution'

p66 on RHS of equation (3.57) replace '$\mathrm{i}\partial\psi/\partial t$' by '$\mathrm{i}\partial/\partial t$'

p88 first line after equation (4.86) replace 'p'_x/E' by 'p'_x/E''

p89 in equation (4.89) replace 'E' by 'E'', and in equation (4.91) replace '$\mathrm{e}^{a_x\vartheta/2}$' by '$\mathrm{e}^{\alpha_x\vartheta/2}$'

p90 on the RHS of the first line of the equation following equation (4.94), replace 'ϕ' by 'ψ'

p99 in equation (4.139) replace 'eA^0' by 'qA^0', and in the second line of equation (4.140) replace '$-eA^0$' by '$+qA^0$'

p100 in equations (4.141) and (4.142) replace '$-eA^0$' by '$+qA^0$'; in equation (4.143) replace '$+eA^0$' by '$-qA^0$'; in the line before equation (4.145) replace 'eA^0' by 'qA^0'; in equation (4.146) replace '$-eA^0$' by '$+qA^0$'

p102 third line of part (a) of problem 4 replace 'ϵ_{ijk}' by '$\epsilon_{ijk}\sigma_k$'

p104 in the displayed formula of part (i) of problem 4.14 replace '$(\boldsymbol{\sigma} - \mathrm{i}\boldsymbol{\nabla})^2$' by '$(\boldsymbol{\sigma} \cdot -\mathrm{i}\boldsymbol{\nabla})^2$'

p125 first line after equation (5.68) replace '$\hat{a}$ and $\hat{a}^\dagger$' by '$\hat{a}^\dagger$ and $\hat{a}$'

p131 in equation (5.109) replace '$\mathcal{L}$' by '$\hat{\mathcal{L}}$'

p136 on LHS of equation (5.132) replace '$\mathrm{d}k$' by '$N\mathrm{d}k$'

p139 in part (a) of problem 5.4 replace '(5.53)' by '(5.55)'

p140 in Problem 5.8(b) replace '(5.127)' by '(5.128)'

p151 line following equation (6.46) replace '(6.43)' by '(6.46)'; in equation (6.51) replace '$(2\pi^3)$' by '$(2\pi)^3$'

p152 in equation (6.53) replace '$(2\pi^3)$' by '$(2\pi)^3$'

p153 in equation (6.60) replace 'm_{B}' by 'm_{B}^2'

p159 in equation (6.90) replace 'E_{A}' by 'E'_{A}'

p163 in equation (6.103) replace 'q_i' by 'q_i^2'

p164 penultimate line of second paragraph replace '2.4.2' by '2.2'

p168 two lines after equation (6.125) replace '(6.111)' by '(6.112)'

p176 in equations (7.16) and (7.17) replace '$b^\dagger$' by '$\hat{b}^\dagger$'

p177 in the second equation of (7.18) replace '$\hat{b}^\dagger(k)$' by '$\hat{b}^\dagger(k')$'; in equation (7.19) replace '$\hat{a}_j(k)$' by '$\hat{a}_j^\dagger(k')$', and '$\delta(\mathbf{k} - \mathbf{k}')$' by '$\delta^3(\boldsymbol{k} - \boldsymbol{k}')$'

p179 line 4 from the bottom of the page replace 'particles going from 2 to 1 if $t_2 > t_1$' by 'particles going from 2 to 1 if $t_1 > t_2$'

p180 in the horizontal axis of figure 7.1(b) interchange the labels t_1 and t_2

p183 line 10 replace 'satisy' by 'satisfy'

p184 in the line before equation (7.50) replace '(problem 7.5)' by '(problem 7.6)'; in equation (7.51), replace '$\int \frac{\mathrm{d}^3\boldsymbol{k}}{(2\pi)^3 \sum_{s=1,2}}$' by '$\int \frac{\mathrm{d}^3\boldsymbol{k}}{(2\pi)^3} \sum_{s=1,2}$'; and in equation (7.52) replace '$\hat{d}_s(k)]$' by '$\hat{d}_s(k)]\,\omega$'

p186 in the line above equation (7.62) replace '(3.20)' by '(3.21)'; also, on the LHS of equation (7.62) replace 'A_ν' by 'A^ν'

p189 in equation (7.85) replace the second exponential by '$\mathrm{e}^{\mathrm{i}k\cdot x}$', and replace '$\sum_\lambda \int \frac{\mathrm{d}^3\boldsymbol{k}}{(2\pi)^3\sqrt{2\omega}}$' by '$\int \frac{\mathrm{d}^3\boldsymbol{k}}{(2\pi)^3\sqrt{2\omega}} \sum_\lambda$'

p192 on the LHS of equations (7.102), (7.103) and (7.104), replace '$\epsilon^\mu(\lambda = 1), \epsilon^\mu(\lambda = 2), \epsilon^\mu(\lambda = 0), \epsilon^\mu(\lambda = 3)$' by '$\epsilon^\mu(k, \lambda = 1), \epsilon^\mu(k, \lambda = 2), \epsilon^\mu(k, \lambda = 0), \epsilon^\mu(k, \lambda = 3)$'

p193 two lines above equation (7.111) replace '$(|\boldsymbol{k}|, 0, 0|\boldsymbol{k}|)$' by '$(|\boldsymbol{k}|, 0, 0, |\boldsymbol{k}|)$'

p194 in the left hand side of the first line of equation (7.113) replace '$\hat{\alpha}_3^\dagger$' by '$\hat{\alpha}_3$'; line before equation (7.115) replace '7.12' by '7.13'

p197 line above equation (7.132) replace '$\hat{H} = \hat{H}_\mathrm{D} + \hat{H}'_\mathrm{D}$' by '$\hat{\mathcal{H}} = \hat{\mathcal{H}}_\mathrm{D} + \hat{\mathcal{H}}'_\mathrm{D}$'; in equation (7.132) replace '$\hat{H}'_\mathrm{D}$' by '$\hat{\mathcal{H}}'_\mathrm{D}$'; last line of the page after 'Lagrangian' insert 'density'

p199 on the LHS of equation (7.139) replace $\hat{H}'_S$' by $\hat{\mathcal{H}}'_S$'; 5 lines from the bottom of the page replace '6.14' by '6.1.4'; 4 lines from the bottom of the page replace '$\hat{H}'_S$' by '$\hat{\mathcal{H}}'_S$'

p200 in problem 7.8, replace '$\begin{pmatrix} 0 \\ 1 \end{pmatrix}.\quad]$' by '$\begin{pmatrix} 0 \\ 1 \end{pmatrix}.$'; replace '$\begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}.$' by '$\begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}.\quad]$'

p201 first line of problem 7.10 replace '$j_{\rm em}$' by '$j^\mu_{\rm em}$'; in problem 7.15, replace '$\hat{H}'_S$' by '$\hat{\mathcal{H}}'_S$'

p210 in equation (8.34) replace the two occurrences of '$\boldsymbol{\sigma} \cdot \boldsymbol{A}$' by '$-\boldsymbol{\sigma} \cdot \boldsymbol{A}$'

p211 line above equation (8.38) replace '4.12' by '4.11'

p212 on right hand side of equation (8.44) replace 'i$e2\pi$' by 'i2π'

p216 replace the first line of equation (8.76) by '$\mathrm{Tr}[(\not{k}' + m)\gamma^\mu(\not{k} + m)\gamma^\nu] = \mathrm{Tr}(\not{k}'\gamma^\mu \not{k}\gamma^\nu) + m\mathrm{Tr}(\gamma^\mu \not{k}\gamma^\nu)$'

p219 in equation (8.91) replace '$\hat{c}_{s'}(p')\hat{a}(k')$' by '$\hat{c}_{s'}(k')\hat{a}(p')$' and replace '$\hat{a}^\dagger(k)\hat{c}^\dagger_s(p)$' by '$\hat{a}^\dagger(p)\hat{c}^\dagger_s(k)$'

p222 replace all of item (v) by
'(v) Multiplying these factors together gives the quantity i$\mathcal{M}$; multiplying the result by an overall 4-momentum-conserving δ-function factor $(2\pi)^4\delta(p' + k' + \cdots - p - k - \cdots)$ gives the quantity $\mathcal{A}$.'

p223 second line of equation (8.114) replace '$(2\pi)^3$' by '$(2\pi)^6$'

p225 line 2 replace 'a target' by 'a pointlike target'; first line of section 8.4.1 replace 'to e^-' by 'to s^+ and e^-'

p226 two lines above equation (8.129) replace '(8.14)' by '(8.43)'

p227 line following equation (8.133) replace '(8.15)' by '(8.44)'; in equation (8.134) replace '$(8\pi a^3)^{1/2}$' by '$(8\pi a^3)$'

p232 on RHS of equation (8.158) replace 'γ_ν' by 'γ^ν'

p234 in expression (8.161) replace the numerator factor '$(\not{p} + \not{k} + m)$' by '$(\not{p} - \not{k}' + m)$' and replace '$u(p', s')$' by '$u(p, s)$'

p238 in expression (8.184) replace '$(e^2/q^2)^{-2}$' by '$(e^2/q^2)^2$'; in the line following (8.184) replace 'before' by 'before (see equation (8.118))'

p239 in equation (8.192) replace '$\tan^2\theta/2)$' by '$\tan^2(\theta/2)$'

p240 in equation (8.194) replace '$B^{\mu\nu}$' by '$e^2 B^{\mu\nu}$'

p241 line 1 replace '$T^{\mu\nu}$' by '$B^{\mu\nu}$'

p242 in the first line following equation (8.208) replace 'muon' by 'proton'

p244 in the first equation of problem 8.1 replace 'A^{ν}' by 'A^{μ}'

p245 in the first line of problem 8.4 replace 'x'' by 'x^1'; in the second line of problem 8.5 (a) replace '4.13' by '4.4(b)'

p246 in the last line of part (a) of problem 8.16, replace 'it is, in fact, zero.' by 'it is, in fact, zero in the massless limit.'

p247 in the first line of part (d) of problem 8.19 delete 'elastic'

p251 in the line above equation (9.15) replace 'so that' by 'so that (see problem 9.2)'

p252 line 2 replace 'variables' by '*dimensionless* variables'; first line after equation (9.18) after 'frame.' insert 'Note that relation (8.222) shows that $x = 1$ for elastic scattering'.

p254 in figures 9.3 and 9.4 replace 'yp' by 'fp'

p257 line above equation (9.39) replace 'normalization' by 'normalization (see equation (7.84))'; on the LHS of equation (9.39) replace '$\epsilon^2(\lambda = \pm 1)$' by '$\epsilon^*(\lambda = \pm 1) \cdot \epsilon(\lambda = \pm 1)$'; line above equation (9.44) replace 'mass W, this is just' by 'mass W, this is just the photon energy in the rest frame of the target nucleon:'

p260 in the horizontal axis of figure 9.18 replace 'q^2' by 'Q^2', and in the caption of figure 9.8 replace the three occurrences of 'q^2' by 'Q^2'

p267 line 4 from the bottom of the page delete '(problem 9.7)'

p268 line 2 following figure 9.16 delete '(problem 9.7)'

p269 in figure 9.17, replace 'σ, ω' by 'ρ, ω'; also, the corresponding peak should not go below the dashed line p270 two lines before equation (9.100) delete 'that,'; one line before equation (9.100) delete 'at large q^2,'; in equation (9.100) replace '$\sum e_a^2$.' by '$\sum_a e_a^2$,'; after equation (9.100) insert 'at large q^2, where 'a' includes all flavours produced at that energy.'

p272 in equation (9.104) replace 'd^3k'' by '$\mathrm{d}^3\boldsymbol{k}'$'

p274 on the RHS of the equation just before problem 9.4 part (a) replace 'ψ' by 'ϕ'; in problem 9.4 part (e) replace '$(\bar{\hat{\psi}}_{\mathrm{L}}^{\dagger}\hat{\psi}_{\mathrm{R}} + \bar{\hat{\psi}}_{\mathrm{R}}^{\dagger}\hat{\psi}_{\mathrm{L}})$' by '$(\bar{\hat{\psi}}_{\mathrm{L}}\hat{\psi}_{\mathrm{R}} + \bar{\hat{\psi}}_{\mathrm{R}}\hat{\psi}_{\mathrm{L}})$'

p291 in expression (10.35) replace '$(p'_{\mathrm{A}}, p_{\mathrm{B}})$' by '$(p_{\mathrm{A}}, p'_{\mathrm{B}})$'

p292 in figure 10.6, the left-hand graph should be labelled '(a)' and the right-hand one should be labelled '(b)'; in expressions (10.36) and (10.37) replace '$(p'_{\mathrm{A}}, p_{\mathrm{B}})$' by '$(p_{\mathrm{A}}, p'_{\mathrm{B}})$'; in the last line of the page replace '10.5' by '10.6'

p294 line before equation (10.42) replace '$k' = k - \alpha q$' by '$k' = k - xq$'; line after equation (10.44) replace 'Δ^2' by 'Δ'

p296 in equation (10.51) replace '-1' by '$-\frac{\Lambda}{(\Lambda^2+\Delta)^{1/2}}$'

p297 line 2 delete 'in'

p302 line 4 of third paragraph replace 'calculated' by 'calculable'; in the line above equation (10.70) replace '10.11' by '10.12'

p303 in the first line of section 10.5 replace '10.6(a)' by '10.7(a)'

p321 line 12 below equation (11.60) replace 'm^2' by 'Am^2'

p329 in the last line of the page replace '10.5' by '10.6'

p334 line 5 from the bottom of the page replace 'arbitrarly' by 'arbitrarily'

p336 in problem 11.5 replace '$q^\rho q_\nu q^2$' by '$q^\rho q_\nu / q^2$'

p349 line 28 replace 'nuch' by 'much'

p357 line below equation (E.28) replace 'appendix B' by 'appendix D' p359 in equations (E.48) and (E.49) replace the upper limit '∞' by 'x'

p370 in equation (G.24) replace '$m^2c^2/\hbar^2$' by 'm^2' and replace '.' by ','; immediately following this equation insert 'where we have reverted to units such that $\hbar = c = 1$.'; in third line after equation (G.25) delete '(note that in (G.25) we have reverted to $\hbar = c = 1$)'

p379 in equation (J.2) replace 'γ^ν' by 'γ^μ'

p382 on RHS of equation (J.33) replace '$8a \cdot bc \cdot d - 8a \cdot cb \cdot d + 8b \cdot ca \cdot d$' by '$8(a \cdot b)(c \cdot d) - 8(a \cdot c)(b \cdot d) + 8(b \cdot c)(a \cdot d)$'

p383 two lines before equation (K.3) replace '6.8' by '6.9'

p390 line before equation (L.5) replace '*Spin-0*' by '*Spin*-0'; line following '**L.3 Vertices**' replace '*Spin-0*' by '*Spin*-0'

p392 fourth line from the top replace 'Danby *et al*' by 'Danby G *et al*'

p401 left hand column under 'Mandelstam' replace 's variable, 163,' by 's variable, 164,'; and replace 't variable, 163,' by 't variable, 164,'

p406 right hand column under 'Ward identity' replace '306' by '308'