

# Group Theory in Subnuclear Physics.

## Erratum

Fl. Stancu

August 16, 2021

p.7 In the row above Eq. (1.14) replace function by functional ( thanks to W. Plessas)

p.25 In the second row, containing inequalities, replace [311] by [3111] (thanks to V. Pelgrims)

p.37 Fig. 3.2 The arrow on  $\rho$  and  $\lambda$  should be in opposite direction (thanks to P. Fontaine)

p.64 First row,  $\psi$  should be in italic (thanks to N. Matagne)

p.75 The function labelled by the Yamanouchi symbol (1211) (row 2) of configuration  $\alpha^2\beta^2$  has the norm  $-1/\sqrt{12}$  instead of  $-1/\sqrt{6}$  (thanks to D. Bartz)

p.84 The matrix of the permutation (23) belonging to  $S_5$  has the first nonzero diagonal element equal to  $-1/2$  instead of  $-1/3$  (thanks to D. Bartz)

p.88 In the content of Exercise 4.3 replace the formula number (4.89) by (4.90) (thanks to V. Pelgrims)

p. 89 In the last row  $g \in S_{n-1}$  should be replaced by  $g \in S_{n-1}$  (thanks to N. Matagne)

p.90 Eq. (4.95b) replace the inequality sign  $>$  by  $\geq$

p.108 Line 6 of Section 4.6 row 6 , the letter m should be in italic in  $m+1$  (thanks to P. Fontaine)

p.108 Section 4.6 row 8 , replace ] by [ in front of  $f_2$  (thanks to P. Fontaine)

p.111 In the list of dimensions of irreps of  $S_8$  indicated after eq. (4.126) the entry  $d_{[321^2]}$  should be replaced by  $d_{[321^3]}$  (thanks to F. Pauquay)

p.114 Eq. (4.135) replace  $S(\dots\dots[f']Y')$  by  $S(\dots\dots[f]Y)$

p.122 In Table 4.6 the multiplicity associated to the inner products  $[3^2] \times [321]$  or  $[2^3] \times [321]$  should be zero for the irrep  $[3^2]$  instead of 2 and 1 for  $[31^3]$  instead of 3.

p.142 Insert bra in the left-hand side of eq. (6)

p.150 Eq. (5.12) in the bracket  $(\rho = 1, 2, \dots, n)$   $n$  should be replaced by  $r$  (thanks to N. Matagne)

p.150 Eq. (5.15a) on the left hand side  $d$  should not be italic

p.170 In the 7th row of the section 5.8 the product  $so(3) \times so(3)$  should be replaced by the direct sum  $so(3) \oplus so(3)$

p.173 In the second row after (5.113) replace  $l$ -dimensional by  $\ell$ -dimensional (thanks to N. Matagne)

p.194 In the row after Eq. (5.171)  $\phi$  should be italic (thanks to N. Matagne)

p.198 In Eq. 2,  $\partial$  is missing in the numerator (thanks to N. Matagne)

p.227 In Eq. (6.105) replace the operator  $1 - \alpha J_k$  by  $1 - i\alpha J_k$  (thanks to D. Bartz)

p.231 Eq. (6.127) the left and right parantheses (...) in the rhs of  $G_1$  should have equal size, like e.g. in  $G_2$

p.240 In row 9 replace (6.171) by (6.177) (thanks to D. Bartz)

p.246 Eq. (7.35) replace the index  $i$  by  $k$  in the left hand side

p.253 Eq. (7.89) the coefficient in front of  $\sigma_{0i}$  is  $1/2$  instead of  $i/2$

p.256 In the before last row the quantity  $\alpha_\mu$  should be replaced by  $a_\mu$  (two times) (thanks to W. Plessas)

p.266 In the right hand side of the second Eq. (8.27)  $v'$  should be replaced by  $v$  (thanks to Augustin Anh Khoa LU)

p.268 Eq. (8.50) , the phase of the element  $u_{22}$  should have opposite sign namely  $+i/2(\alpha + \gamma)$  instead of  $-i/2(\alpha + \gamma)$  (thanks to L. Remezo)

p.276 In Eq. (8.87) replace  $a_{10}$  by  $a_{00}$

p.276 In Eq. (8.88) the function F in the last term should be outside the square bracket (thanks to Jean-Philippe Halain)

p.278 In Table 8.2 the corect value of  $d_{888}$  is  $-1/\sqrt{3}$ , not  $-\frac{\sqrt{3}}{6}$  (thanks to B. Van den Bossche)

p.279 In the left hand side of the second Eq. (8.103) replace  $N_{-a,-\beta}$  by  $N_{-\alpha,-\beta}$  (thanks to N. Matagne)

p.281 In the second row of Eqs. (8.104) replace  $[H_2, E_{\pm\alpha}] = \pm E_{\alpha}$  by  $[H_2, E_{\pm\alpha}] = \pm E_{\pm\alpha}$  (thanks to Alexandre Payez)

p.284 Second row after Eq. (8.124) remove space between representation and comma (thanks to N. Matagne)

p.290 Table 8.4 The table is valid for  $\lambda = \mu$  also

p.299 The flavor state of  $\bar{d}$  in the table of p.299 should have opposite sign

p.305 Row 7 from below of the section **Classification of hadrons** replace mutliplet by multiplet

p.306 Eq. (8.165) replace  $\theta$  by u and  $\delta$  by d (thanks to D. Bartz)

p.309 Table 8.6 The correct decays are  $K_L^0 \rightarrow 3\pi^0$  instead of  $K_L^0 \rightarrow 3\pi^+$  and  $K_L^0 \rightarrow \pi^{\pm} e^{\mp} \nu_e$  instead of  $K_L^0 \rightarrow \pi^{\pm} e^{\mp} \nu_{\mu}$

p.316 Table 8.7 column 1, line 17 replace  $[21]^3$  by  $[21^3]$

p.323 Table 8.9 , Mass of  $\Lambda_b$  is 5641 instead of 5461 ( thanks to S. Pepin )

p.334 In the first equation which is not numbered, after the last equality sign replace the diagram  $[321]^1$  by  $[311]^1$

p.335 In Eq. (8.223) replace  $C = 0$  associated to  $[111]$  by  $C = -1$  and  $C = 1$  associated to  $[11]$  by  $C = 0$

p.336 Line 5, replace C=3 by C=2 (thanks to D. Bartz)

p.338 Table 8.14 The third diagram , with two boxes in the first column, should have  $C=1$  instead of  $C=10$

p.343 In one of the unnumbered relations between (8.233) and (8.234) replace  $T^{12} = ud - ds$  by  $T^{12} = ud - du$

p.351 The eq. between (9.25) and (9.26) should have proportionality sign instead of equal sign. If equality is maintained one has to add a factor of 2 in the right hand side

p. 361 Line 5 from below, replace  $2S$  by  $2S+1$  (thanks to N. Matagne)

p. 395 In Eq.(6) right hand side , replace  $\alpha_s$  by 1