

Errata
“Nuclear Reactor Physics”
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Chapter 1

p6 middle of page replace “ $1/v$ ” with “ $1/v$ ”.

p9 Fig. 1.8 replace “Library” with “Laboratory” in title.

p17 1.18 title replace “ $^{240}\text{U}_{94}$ ” with “ $^{240}\text{Pu}_{94}$ ”.

p19 end 6th line down, replace “ $1/v$ ” with “ $1/v$ ”.

P19 Eq. 1.4, “ $1/v(E)$ ” with “ $1/v(E)$ ”.

p20 section on Neutron Emission replace “delays” with “decays” in 3rd line.

p20 line above Eq. 1.9 insert “section” after “cross”.

p24 replace “wavelengths” with “energies” in 5th line.

p 27 Example 1.1 “weight percent” and “wt%” should be replaced by “volume fraction”, “ w_i ” should be replaced by “ v_i ”, the ‘i’ subscript on N_0 in the 5th line should be removed, and “1:1” should be replaced by “50:50”.

p29 Eq. 1.18 replace “ $(A+1)^2$ ” with “ $2v_{cm}v_c$ ” in denominator.

p31 Example 1.2 replace “=” with “+” in 7th line.

Chapter 2

p35 section on Capture-to-Fission Ratio replace “ $1/v$ ” with “ $1/v$ ” in 1st line.

p41 section on Source Multiplication replace “ $k>0$ ” with “ $k>1$ ” in 1st line, “ $k-1$ ” with “ $1-k$ ” in denominator of Eq. 2.6, and “ $k<0$ ” with “ $k<1$ ” in 5th line.

p41 change the second “ v ” to a “ v ” in Eq. 2.7, and replace the “F” subscript on N with a “f” in the next line.

p42 last line above section 2.4 replace “ $(1-\beta)k<0$ ” with “ $(1-\beta)k<1$ ”.

p44 Problem 2.2 replace “1:1 wt%” with “50:50 volume fraction”.

Chapter 3

p46 insert “where $\Sigma \equiv N\sigma$ and $\phi \equiv nv$ ” immediately after Eq. 3.1.

p46 Eq. 3.2 insert “ Σ_s ” immediately after the = sign.

p47 just below Eq. 3.8 the term that μ_0 is equal to is “ $2/3A$ ”.

p49 Eq. 3.14 replace LHS with $1/\phi d\phi/dx|_{x_b}$

p50 Eq. 3.16 replace first term with $d^2\phi(x)/dx^2$

p50 2 lines above Eq. 3.18 replace “inward” with “outward”

p53 3rd of Eqs. 3.26 and Eq. 3.29 all the “r” should be bold

p53 last of Eqs. 3.26 replace subscript “cyl” with subscript “sph”.

p53 make all r and r’ bold

p53 line below Eq. 3.30 replace “continuity” with “interface”.

p59 Eq. 3.54 replace “ \mathbf{v} ” with “ \mathbf{r} ” in argument of 1st term.

p62 Eq. 3.69 remove the first “(r,z)” from the term on the RHS; in the para between Eqs. 3.72 and 3.73 replace “ $J_0(v_m a_{ex})$ ” with “ $J_0(v_m)$ ” in 7th line and replace “ v_m^2 ” and “ v_1^2 ” with “ $(v_m/R_{ex})^2$ ” and “ $(v_1/R_{ex})^2$ ”, respectively, in the last line; and replace “ v_1^2 ” with “ $(v_1/R_{ex})^2$ ” in Eq. 3.73.

p64 Eq. 3.77 “ $\lambda_1 = v(B_1^2 - B_m^2)D = \dots$ ”

p66 line 2 replace the existing term with “ $D=1/3\Sigma_t$ ”.

p69 Table 3.5 for cylinder, eq. beginning with L_0 replace “ κ_0 ” with “ K_0 ” in last term

p73 Eqs. 3.91, exchange the “E” and “F”.

p73 Example 3.4 insert “ $\times 10^{24}$ ” after 0.0334 in 5th line; replace “ $\sigma_a=2.404$ ” with “ $\Sigma_a=2.404$ ” in the 8th line; replace “1.60” with “1.38” in the 9th line; replace “5.04” with “1.04” in the 1st line of the 2nd para; and replace “0.398” with “1.575” and “0.0089” with “0.0264” in the last line on the page.

p75 replace “1.202” with “1.610” in 1st line, replace “0.0165” with “0.010” and “0.0436” with “0.0266” in the 7th line; and “0.3980” with “1.575”, “0.0164” with “0.010”, “0.4144” with “1.585”, “0.0089” with “0.0264”, “0.0436” with “0.0266” and “0.0525” with “0.053” in the last 2 lines of the 2nd para.

p79 Example 3.5 replace " Σ_{ac}^{eff} " with " Σ_c^{eff} " 5 lines from bottom
 p77 Eq. 3.100 replace the "p" subscript with a "F" on the V in first term on the right side.
 p80 replace " $J_0(vR)$ " with " $J_0(v)$ " in the last line.
 p82 middle of page replace " $x_i - 1/2$ " and " $x_i + 1/2$ " with " $x_{i-1/2}$ " and " $x_{i+1/2}$ "
 p85 middle of page 2 lines above Eq. 3.127 replace " $(i=2,j=1)$ " with " $(i=1,j=2)$ "
 p92 replace " $v\Sigma_f = 0.185$ " with " $v\Sigma_f = 0.125$ " and " $v\Sigma_f = 0.15$ " with " $v\Sigma_f = 0.12$ " in Problem 3.12.
 p92 3rd from last line replace "boundary" with "boundaries" and insert after parenthesis "and ($0 < x < 100\text{cm}, y=0$),"

Chapter 4

p98 replace "resonance" with "effect of the resonance on the flux" in last sentence of 1st para.
 p98 Eq. 4.9 upper limit on 2nd integral replace "E" with "E+ ΔE ".
 p99 Eq. 4.10 insert "j" superscript on Σ_s^j in last term.
 p99 Eq. 4.12 insert prime in $(E')^2$ term; insert "C" after first summation sign.
 p101 Eq. 4.21 insert "j" superscript on Σ_s^j in last term.
 p104 just below Eq. 4.31 replace " $\Sigma_a(1+DB^2)$ " with " (Σ_a+DB^2) ".
 p105 Eq. 4.32 the last term is " $\lambda\Delta(E/kT_n)/E$ ".
 p110 Example 4.1 last line replace " Σ_2 " with " Σ_a^2 ".
 P111 replace ":" with a comma in first line after Eq. 4.52
 p113 at bottom of page remove "cm" subscript on E in two places.
 p117 second line from bottom add "2" superscript to R^2 .
 P125 replace "groups" with "non-leakage probabilities" in first line after Eq. 4.81.
 p134 last full line replace "at" with "an".

Chapter 5

p141 3rd line replace "2 MeV" with "1 MeV".
 p142 Eq. 5.2 replace subscript "dip" with subscript "p" on I in first term; the first term to the right of the 3rd integral sign should be "dE".
 p144 Eqs. 5.12 add "+ C_{i0} " at end of second equation.
 p146 Eqs. 5.20 in second equation add "n" immediately after " β/Λ "
 p147 in line above Eq. 5.27 replace " $\lambda=6 \times 10^{-5} \text{ s}$ " with " $\Lambda=6 \times 10^{-5} \text{ s}$ ".
 p150 Eq. 5.33, add a minus sign in front and replace " $\rho(t)/\beta$ " with " $\beta/\rho(t)$ " on right.
 p154 in 2nd line add " n_0 " after " β_1 " and remove comma after " λ_1 ".
 p161 midway last para replace " Σ_p/N_M " with " Σ_p/N_F "
 p164 in 2nd line after "Startup Temperature Defect" replace "subcritical" with "supercritical".
 p170 in Eq. 5.109 the exponent in the last term is " $-s\Delta t$ " instead of " $s\Delta t$ ".
 p171 in Eq. 5.110 the subscript on ω in the last terms is "F".
 p173 in last line of Table 5.4 the numerator of the last term should be " X_{s2} " instead of " s_{s2} ".
 p178 in Eq. 5.119, add a "ex" subscript to " ρ " in last term.
 P178 in Eq. 5.121 the "P" in the first term is a subscript.
 p178 in Eq. 5.122 the term in the denominator is " $\{\phi_{pp}(\tau)\}$ ".
 p179 in Eq. 5.124 remove the comma between "n" and " Δ " in the first term on right.
 p179 in the last line above Reactor Noise Method the term in brackets is " $(-i\omega)$ ".
 p179 in Eq. 5.127 replace "d τ " with "dt" on right.
 P182 in Eq. 5.131, remove the second "=" and the terms to the right of it.

Chapter 6

p198 Table 6.1, capital "RI" in heading of 3rd from last column instead of "Ri".
 p205 Table 6.2, the 2nd letter in "Np", "Pu", "Am" and "Cm" should be lower case in the last 11 rows of the first column.
 p219 replace " γ_{Te} " with " γ_{Te} " in 2nd term in numerator of 2nd form of Eq. 6.27.
 p222 10th line, replace "as" with "than" after MOX.
 p226 heading of 2nd column in Table 6.8 is "Half-Life $t_{1/2}$ " with lower case t.

p233 last para, add “and in the depleted uranium” at the end of the next-to-last sentence, and add “and depleted uranium” after the word “fuel” in the last sentence.

p241 2nd line problem 6.7 “1.0 years” instead of “1.5 years”.

p242 2nd line problem 6.13 “increases” instead of “decreases”.

p242 2nd line problem 6.20 “Table 6.7” instead of “6.2”.

Chapter 7

p253 2nd line in section 7.4, insert “which evolved to the reactor” after the word ‘reactor’.

Chapter 8

p273 2nd line in section 8.2, add comma after “systems”.

p283 5 lines from the bottom, “borated” instead of “borate”.

p285 in first line replace “1987” with “1986”.

Chapter 9

p307 in Eq. (9.36) replace “ $E_1(x,x')$ ” with “ $E_1(\alpha[x,x'])$ ”.

p313 in last line replace “Eq. (9.46)” with “Eq. (9.45)”.

p320 right side Eq. (9.86) replace “ $2E_3$ ” by “ E_2 ”.