

Preface

Replace “hundreds” by “tens” in 7th line.

Ch. 1

p3, Eq. (1.6), the exponent is “ $-(m_i v^2) / 2T_i$ ”.

p6, between Eqs. (1.9) and (1.10) “ $e(n_i - n_e)$ ” should be “ $e(n_i - n_e)$ ”

p10, add at end of line after Eq. (1.25) “... CM system is determined by trigonometry”

p11, add at end of line after Eq. (1.28) “...section found by using Eq. (1.25)”

p11, Eq. (1.32) 1st line should contain “ $\sigma(\Delta\theta_c)$ ” not “ $\sigma(\Delta)(\Delta\theta_c)$ ”

p 11, Eq.(1.32) next to last line, remove the “ $\Delta\theta_c$ ”

p 14, Eq. (1.46), on the left side all subscripts “e” should be replaced by “E”, and on the right side in the 3rd equation the subscript “e” should be replaced by “90”.

p14, line below Eq. (1.49) replace “ u_{th} ” with “ v_{th} ”

Ch. 2

p 27 last of Eqs. 2.28, the (t') is an argument, not superscript, of E. it should be dt' under integral.

p 32 put an asterisk “*” at the end of the section title 2.2.2 Second Adiabatic Invariant*

p 34 last line above Eq. (2.66), replace “Eq. (1.52)” with “Eq. (1.56)”

p 35 equation just above Eq. (2.74) use lower case z subscript on B_z

Ch. 3

p54 Eq. (3.35) in denominator of last term replace “ δ ” with “ ∂ ”.

Ch. 4

p66 Eq. (4.66), add at the end “ $\equiv \eta E$ ”.

p 69 Eq. (4.23), put minus sign in front first term on right.

p 70 Eq. (4.26), remove minus sign in front of last term in last two eqs.

Ch. 5

p87 Eq. (5.20a) the π_σ should be bold, indicating tensor.

p94 1st line, insert “gyro-“ before “frequency”.

p100 Eq. (5.102) the σ in the last term should be a subscript of the S, so that the last term in the eq. is “ S_σ^0 ”.

Ch. 6

p112 Eq. (6.51), the “a²” should be in the numerator.

Ch. 7

p 133 Eq. (7.13), the first $\dot{\nu}$ should have a dot over it indicating time derivative.

p 135 in line just above Eqs. (7.23),” Eq. (7.3)” should be” Eq. (7.2)”.

p 137 add at end of last line on page “ $\mathbf{j} = en(\mathbf{v}_i - \mathbf{v}_e) \equiv \sigma \cdot \mathbf{E}$ which leads to”
p141 in line just after Eq. (7.50), it should be “Eq. (7.49)”.

Ch. 8

p 157 Eq. 8.6 the RHS should be $\frac{P}{\rho(\gamma-1)}$

p 157 Eq. 8.7 the third form $\frac{P}{\rho}$ should be omitted and the final form should be $\frac{P}{\gamma-1}$.

p 165 Eq. 8.45, the second term should have a “ ρ ” in front

p 165 Eq. 8.46 should be $\frac{\partial \mathbf{B}}{\partial t} + \nabla \times (\mathbf{u} \times \mathbf{B}) = 0$

p 169 first para, insert 3rd sentence “The second term in the integrand is always stabilizing, and the third term can lead to current-driven instabilities.”

p172 fig. 8.7 replace ‘y’ with ‘ γ ’ in y-axis label.

p173 1st para, “ $v > 2.5$ ” should be replaced by “ $v > 2.5$ ”.

p176 Fig. 8.11 the “0” above the arrow in the lower right should be a “ θ ”

p178 3rd para, insert “on outboard side” at end of last sentence.

Ch. 9

p 210 section 9.1.4, 4th line down, close parenthesis after v_e .

p213 2nd line, subscript on E should be θ .

p215 in line between Eqs. (9.39) and (9.40) there should be second hyphen in “electron-ion-impurity”

p216 second line, close parenthesis “)” after “5.5.”

p 239 Eqs. (9.195) insert several spaces between “ β_j ” and “ \widehat{M}_{ϕ_j} ” in last line to indicate that these are two separate definitions.

p240 Eq. 9.196 include “i” and “T” subscripts on the first and second, respectively, M_{\parallel}

p 244 section 9.10 Orbit Distortion* put an asterisk on this section. Also in table of contents.

p 250 problem 9, third to last line, L_n^{-1} should be L_n , and L_{Ti}^{-1} should be L_{Ti} .

Ch. 10

p 263 last term on first line of Eq. (10.61) $v_{\theta j}^s$ should be $\tilde{v}_{\theta j}^s$.

p 263 numerator of Eq. (10.62) $\beta_{\sigma j}$ should be β_j .

Ch. 11

p 268 line above Eq. 11.3, remove asterisk on \tilde{n}_i

p 276 the quantities $v_{i,e}$ and $v_{i,e}^*$ in the text and Eqs (11.36) and (11.38) should be replaced by $v_{i,e}$ and $v_{i,e}^*$, respectively.

p 284 problem 2, replace k_{\parallel} and k_y with k_{\parallel}^{-1} and k_y^{-1}

p 284 problem 7, add at end and $n_e = 2 \times 10^{19} \text{ m}^{-3}$

Ch. 12

p 285 Eq. 12.2, there should be an I_p^f on the RHS at the end of the last term

p 302 just below Eq. (12.53) replace ϵ_0 with ϵ_0^{-1} .

p 302 line above Eq. (12.54) close parenthesis on “(see chapter 7)”.

Ch. 13

p315 1st line below Eq. (13.1), remove “(dashed vertical line)”.

p 317 last word in next to last paragraph, replace “sheath” with “surface”.

p326 3rd line below Eq. (13.21), the term should be “ $\langle E \sigma_R v \rangle_{z+1}$ ”.

p329 last para, eliminate “and recombination processes” the second time it appears.

Ch. 14

p 332 Fig. 14.1 subtitle (v) should be “Rail limiter”.

p 336 the last part of the eq. between eqs. 14.4 and 14.5 should read “ $\approx \frac{Q_{\parallel}}{L_D}$ ”.

p 338 Add at the beginning of the first sentence “The heat conduction “ Eq. (14.9) can...

p 351 Eq. 14.63 the R_c in the denominator should be squared.

p 352 Eq. 14.67, the T_e in denominator should be a subscript of λ .

p 352 Eqs. 14.66 and 14.67, replace λ_{Te} with L_{Te} .

p 352-354 Section 14.7.2 the Fig referred to in 4 places should be “Fig. 14.6”.

p 352 in next-to-last line replace “counter-clockwise” with “clockwise”.

p359 5 lines from bottom of page, make “neutrals” plural

p360 problem 1 replace “and” with a comma and add at end “,the temperature is 100 eV and $B = 4 \text{ T}$.”

Ch. 15

p 372 Eq. (15.28), the RHS should be $\frac{\Delta \psi_0}{\Delta \phi} \frac{\partial}{\partial \psi} \left(\frac{E_r}{RB_{\theta}} \right)$.

p 378 para after Eq. 15.39, 4th line should be “...dependence of v_{ion} or v_{at} or L_z is....”

p 394 1st line after Eq. 15.81 at end of sentence insert “and $v_n \equiv v_{ion} - v_{rec}$ ”.

Ch. 16

p 437 heading for section 16.4.4, insert “Escape” after “and”.

Ch. 17

p464 insert an 'a' at the end of next to last line in the para in the middle of the page.

p468 Eq. 17.18 replace " $M^{-0.58}$ " by " $M^{0.19} A^{-0.58}$ " like in Eq. 19.2 and add " $A=R/a$ " in the line following the equation. Change the constant 0.144 to 5.62×10^{-2}

p471 line below Eq. 17.36 starts with lower case "for" and is not indented.

p475 add at end of last para "In practice, $\tau_p \approx \tau_E$ is frequently used."

p478 problem 2, add at beginning of second line $P_{nb} = 5MW$,

Ch 18

p493 insert " $E_{ion} = 13.6 \text{ eV}$ is the ionization energy," after "radial gradient scale lengths," in the sentence below Eq. (18.43).

Ch. 19

p501 Eq. 19.2 change the constant 0.144 to 5.62×10^{-2}

p507 Eq. 19.22 add $S_m = \text{lesser} \left\{ \frac{1}{3} \text{ultimate stress or } \frac{2}{3} \text{yield stress} \right\}$

p507 just above Eq. 19.24, the B is not bold.

Appendix C

p527 Eq. (C.18) these are two separate eqs, and there should be a space before " $\nabla \cdot (f\mathbf{T}) = \dots$ "

Appendix D

pp 528-536 replace all unsubscripted δ with partial derivative signs ∂ . Note that the sub/super-scripted $\delta_{j,k}^i$ in Eq. D7 are Dirac delta functions and not replaced.

Appendix E

p 537 "Debye length" should be "Debye length".

p 537 footnote insert ".....ion, and " m_i/m_p " is the ratio....

p538 next-to-last eq., insert slash "/" before $z_i n_i$.

Index

p556 add "—resistivity 14, 78, 90