Fundamentals of Atmospheric Modeling Second Edition

Corrections and Modifications

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Cover

Change “Edtion” to “Edition” on side.

Acknowledgments

Add Diana Ginnebaugh, Adam Kuester, Jordan Wilkerson

Introduction

P. 9. First line, change “from a few tens of” to “from the size of a few tens of”

Chapter 1

Chapter 2

Example 2.5. Change “water vapor density from (2.21)” to “water vapor density from (2.25)”

Chapter 3

Eq. 3.50, 3.51, 3.52, 3.56, 3.58, 3.59 revise turbulence tems: e.g., $\overline{w'N'} = \rho_a K_{h,zz} \frac{\partial}{\partial z}\left(\frac{\overline{N}}{\rho_a}\right)$

Chapter 4

Chapter 5

Chapter 6

P. 180. Table 6.2

Table 6.2 (k) should be $\frac{\partial N}{\partial x} \approx \frac{3N_{i-4} - 16N_{i-3} + 36N_{i-2} - 48N_{i-1} + 25N_i}{12\Delta x}$

Table 6.2 (l) should be $\frac{\partial N}{\partial x} \approx \frac{-25N_i + 48N_{i+1} - 36N_{i+2} + 16N_{i+3} - 3N_{i+4}}{12\Delta x}$

Chapter 7

P. 225, Problem 7.12e. Assume R_e is in units of millions of meters.

P. 226, 3rd line from the top, the equation should be $\pi_{i,j} = p_{a,surf,i,j} - p_{top}$

Chapter 8

P. 244, Example 8.7, L=-169 m rather than -1.69 m.
P 263, first line from top, change “into (8.114)” to “into (8.115)”
P.269, Equation 8.131, add σ_B to the denominator after ε_i.
P.270, Equation 8.134, add σ_B to the denominator after ε_i.

Chapter 9

Chapter 10

Chapter 11

Problem 11.3, page 416, change "(11.164)-(11.168)" to (11.164)-(11.167)"

Chapter 12

Chapter 13

Problem 13.6, page 468. Change "diameters 100 nm and 200 nm" to "diameters 200 nm and 300 nm"

Problem 13.8. Use subscript *k* instead of *j* throughout the problem to define stage number to avoid confusion between stage boundary diameters (used in the Table accompanying the problem) and average stage diameters, used in Equation (13.16).

Chapter 14

Chapter 15

P. 502, 4-5 lines before Equation 15.20. Change, "where $I \neq M$ and $I \neq N$" to "where $I \neq M$, $I \neq N$, and $M \neq N$".

P. 515, Equation 15.48. Change N_i to $N_{s,i}$

P. 524. Problem 15.11. Add gravity (g) to the fall-speed equation so that it reads $V_{f,i} \approx 2r_i^2 \rho_p g \Big/ 9\eta_a$

Chapter 16

P. 526, line before Equation 16.8, change "where $T=T_s$" to "where $T=T_r$"

P. 551. Problem 16.3. Add gravity (g) to the fall-speed equation so that it reads $V_{f,i} \approx 2r_i^2 \rho_p g \Big/ 9\eta_a$

Chapter 17

P. 581, Equation (17.90). The equation is missing a Kr term in the square root term. The correct equation is

$$\Delta x_{fin} = \frac{-c_{A,0} - c_{B,0} - c_{D,0}K_r - c_{E,0}K_r + \sqrt{\left(c_{A,0} + c_{B,0} + c_{D,0}K_r + c_{E,0}K_r\right)^2 - 4\left(1-K_r\right)\left(c_{A,0}c_{B,0} - c_{D,0}c_{E,0}K_r\right)}}{2\left(1-K_r\right)}$$

Table 17.2, caption. Change "Sucrose (Species *a*) and Mannitol (Species *b*)" to "Sucrose (Species *x*) and Mannitol (Species *y*)"

P. 584, Equation 17.101, change $c_{q,t}$ to $C_{q,t}$ on the left side of the equation.

Problem17.7, page 596. Change "(17.91) and (17.92)" to "(17.100) and (17.101)"

Problem 17.9, page 596. Remove the two extra "+" superscripts following NH_4^+.

Chapter 18

P. 640, Equation 18.89. Change 10^{-16} to 10^{-14}.

Chapter 19

Chapter 20

Chapter 21

Appendices

Table B.3, p. 721. The chemical structure fore ethylbenzene should have a CH_2 instead of a CH_3 attached to the benzene ring.

Table B.4. p. 737. Equation 344. Add CF_2H as a product.

Table B.7, p. 742. Chemical equation 50 should have HSO_4^- rather than HSO_4 as a product.

Table B.8, Footnote, P. 746. Remove "Ka_1=0.0123 mol L^{-1}, Ka_2=6.61x10^{-8} mol L^{-1},"

References

P. 778, In Strom et al., change "Heintzenber" to "Heintzenberg"