

Errata for

A First Course in Atmospheric Thermodynamics

December 23, 2011

This page documents significant errors in the textbook that were discovered after the book went to press. These errors will be corrected in the next printing. If you find errors not listed here, please send a message describing the error to info@sundogpublishing.com.

p. 20, top half: Incorrectly cites Fig. 1.5 as an example of an emagram with logarithmic vertical axis. The axis in this particular figure is not logarithmic.

p. 84, Eqs. (4.7)–(4.9): These equations should read as follows:

$$a + g = -\frac{1}{\rho} \frac{[p(z + dz) - p(z)]}{dz}$$
$$-(a + g) = \frac{1}{\rho} \frac{\partial p}{\partial z}$$
$$\frac{\partial p}{\partial z} = -\rho(a + g)$$

p. 88, Eqs. (4.16) and (4.17): Subscript ‘E’ is missing from M_E .

p. 89, Eq. (4.20): The cosine should not be squared.

p. 94, Eq. (4.32): Missing dp from integral on left-hand side.

p. 113, fifth line from bottom: The altitude associated with 925 hPa is 762 m, not 726 m.

p. 122: “corresponding temperature” should read “corresponding mean virtual temperature.”

p. 135, Problem 5.4: The numerical answer to part (d)-(i) should be 9.99×10^4 J/kg.

p. 148, Eq. (5.75): Equation should read $w = q = w_1 + w_3$.

p. 164, line 16; p. 165, lines 3, 5, and 6; also Eq. (6.18): There are six instances where the subscript i in $T_{1,i}$ or $T_{2,i}$ should be f . In particular, (6.18) should read

$$T_{1,f} = T_{2,f} = \frac{1}{2}(T_{1,i} + T_{2,i}).$$

p. 195, Eq. (7.30): This is an approximate relationship, not an equality.

p. 201, Eq. (7.43): Missing minus sign on far left.

p. 203, Eq. (7.50)–(7.54): θ and θ_e should be T and T_e , respectively.

p. 205, Eq. (7.55): T should be T_{LCL} , where the latter is the temperature of the parcel at its lifting condensation level.

p. 247, Eqs. (8.4) and (8.5): $\partial\theta/\partial z$ should be $\partial\theta'/\partial z$.

p. 261: “at 770 hPa, or around 1 km” should be “at 620 hPa, or around 2.7 km.”

p. 264, Eq. (8.15): $T(p)$ and $T'(p)$ should be switched.

p. 315: A better average radius of the Earth is 6371 km (the value given is the polar radius)