An Introduction to Atmospheric Radiation, 2nd Edition

(Errata)

Preface, xiv, line 12: "Charlie Zender" should be "Charles Zender".

p. 4, Figure 1.3: the lines for dθ should be on the same meridian.

p. 11, 1st line below Eq. (1.2.5) and in Eq. (1.2.6): *k* should be capital *K*.

p. 21, 5th line: "Δv" should be "$\Delta \upsilon$".

p. 23, 1st line below Eq. (1.3.14): "width" should be "half-width". "Also, 3rd line below subsection 1.3.2.2, add ", *v*," after "a velocity component".

p. 28, 2nd line below Eq. (1.4.6): "*s*" should be "s_1".

p. 35, Exercise 1.18: Delete ",where $u_{\tilde{\nu}}$ is the energy density" but add ". Note that in the derivation the energy density $u_{\tilde{\nu}}$ is".

p. 43, the figure caption in Figure 2.4: "1870 and 1860" should read "1976".

p. 46, 2nd line: the latitude "ϕ" should be "φ ".

p. 47, 1st line: below Eq. (2.2.6): "Subsection 2.2.3" should read "Section 2.2.3".

p. 57, Figure 2.10: in the ordinate, "Solar Radiance" should read "Solar Irradiance".

p. 57, 2nd line: Between "with" and "blackbody", add " the Planck curves for".

p. 74, 4th line: "Fig. 2.9" should be "Fig. 2.10".

p. 80, 1st line above Eq. (3.2.11a): insert "and neglecting the last reaction in Eq.(3.2.9a), which is small below 50-60 km" after "On adding Eq. (3.2.9a) and (3.2.9b)". Also, 1st line below Eq. (3.2.11a): "K_{12}" should be "K_{12}".

P 103, Eq. (3.4.2): "$I(z, \mu', \phi')$" in the integral should be "$I(z; \mu', \phi')$".

p. 111, the figure caption in Figure 3.20: "*p*′" after "from point" should be capital "*P*′".

p 126, 1st line above Eq. (4.2.14): Between "the spectral transmittance" and "as", add "with a mean wavenumber subscript $\bar{\nu}$".

p. 131, Eq. (4.3.8): "v_0" should be "v_{0j}".

p. 132, "second (4.3.10)" should read "(4.3.10a)". Also, in this equation and 2nd line from below, change all "*i*" to "*j*".

p. 133, 2nd line in the 2nd paragraph: Change "10 intervals" to "nine intervals".

p. 134, Figure 4.7 (a): two "x's" are missing in 4*dk*.

p. 138, the figure caption in Figure 4.9: "$\Delta \bar{\nu}$" should be "Δv".

p. 147, Eq. (4.4.46): The term "$\exp\left[-\left(\frac{\tilde{\alpha}\,t+\tilde{\alpha}_D^2\,t^2}{4}\right)\right]$" should be "$\exp\left[-\left(\tilde{\alpha}\,t+\frac{\tilde{\alpha}_D^2\,t^2}{4}\right)\right]$".

p. 166, Ex. 4.1, line 5: "atm cm" should read "cm atm". Also, Exercise 4.2, 2nd line: $x = su/2\pi\alpha$, "s" should be capital "*S*".

p. 167, Ex. 4.8: in 1st and 2nd equations, "$\tilde{s}$ and $c_{\tilde{\nu}}$" should be "$\bar{s}$ and $c_{\bar{\nu}}$".

p. 170, line 18: "*grant nuclei*" should read "*giant nuclei*".

p. 207, equation numbers: "Eqs. (5.3.38a) and (5.3.37b)" below Eq. (5.3.37a) should be "Eqs. (5.3.37b) and (5.3.37c)", respectively. Also, 1st line below Eq. (5.3.38a), the equation number "(5.3.38a)" should be "(5.3.37b)".

p. 211, Eq. (5.3.45): the first "σ_o" should be "σ_0".

p. 217, Eq. (5.4.1c), the 1st line: a common "," is missing after $\mathbf{e}^i$.

p.221, 2nd line below Eq. (5.4.13): "$\mathbf{e}_\alpha$" should be "$\mathbf{e}^\alpha$".

p. 227, line 12: "Eq. (5.4.23a)" should be "Eq. (5.4.22)".

p. 230, 1st line below Figure 5.20: Between "a plate with" and "attachments", add "two types of".

P 235, 3rd line in the second paragraph: After "Figure 5.24", delete "using the same cirrus cloud model shown in Fig. 5.23".

p. 255, 4th line in Ex. 5.15: "Eq. (5.4.22a)" should be "Eq. (5.4.22)".

p. 258, Eq. (6.1.1): "+ $(1 - \varpi)B[T(\tau)]$" should read "– $(1 - \varpi)B[T(\tau)]$".

p. 268, the last term in Eq. (6.2.43): an exponent "*e*" is missing after) and before -.

p. 290, Eq. (6.4.1b): a common "," is missing in $I_{\text{in,top}}$.

p. 296, Eq. (6.4.23): "$T_{12}(\mu,\ \mu_0')$" should read "$T_{12}(\mu,\ \mu_0)$".

p. 306, Eq. (6.5.17b): The minus signs before $(\varepsilon u...)$ and the eigenvalue $k\tau_1$ in the numerator should be removed.

p. 310, Eq. (6.5.30c & d): The right-hand sides of these equations should be divided by $(1-\mu_0^2 k^2)$.

p. 314, line 6 after Eq. (6.5.46): add "and including thermal infrared emission" after "After a lengthy and laborious derivation".

p. 316, line 9 in the 2nd paragraph: "Eq. (6.4.46)" should read "Eq. (6.5.46)".

p. 318, Eq. (6.6.3e): "cos $(\xi + \delta_0)$" should be "sin $(\xi + \delta_0)$".

p. 320, Figure 6.15: "E_ℓ" should be "E_l".

p. 337, Eq. (6.7.23a): The term "$\left(\frac{(\ell-|m|)!}{(\ell+|m|)!}\right)$" should be "$\left(\frac{(\ell-|m|)!}{(\ell+|m|)!}\right)^{1/2}$".

p. 338, line 3 after Eq. (6.7.26): "homogeneous" should read "nonhomogeneous".

p. 368, line 7 in the last paragraph: "Spectrometer" should read "Spectroradiometer".

p. 373, line 16 from below: "1.62 μm" should be "1.621 μm".

p. 378, Figure 7.11: The "0" at the bottom of the ordinate should be deleted.

p. 387, line 15 after Eq. (7.4.21): the period after "studies" should be removed.

p. 391, Eq. (7.4.27), in the first term on the right-hand side: "T^s" should be "T^*".

p. 395, Eq. (7.4.45a), the second term on the right-hand side: the transposed notation **T** should be a regular letter (i.e., not bold).

p. 426, 2nd line from below: "90" and "157" should be updated to "89" and "150", respectively.

p. 434, line 13 in Section 7.6.3: "smaller" should read "small".

p. 477, line 12 in Section 8.4.4: "Section 5.4" should be "Section 5.5".

p. 496, 1st line below Eq. (8.5.29): "$s_2 = 0.482$" should be "$s_2 = -0.482$".

p. 502, Figure 8.22 caption, 1st line: "m s^{-1}" should read "m sec^{-1}".

p. 516, Ex. 8.1: "$(2T_a)^{1/4}$" should be "$(2)^{1/4}\,T_a$".

p. 525, 2nd line below Eq. (B.1): "$\delta^2 x$, $\delta^2 y$, $\delta^2 z$" should be "δx^2, δy^2, δz^2".

p. 541, **Chapter 6**, 6.7, 2nd line: "4" in the denominator should be "$4\pi^2$". Also, "$P(\mu, \phi; \mu'\phi')$ $P(\mu', \phi', -\mu_0, \phi_0)$" should be "$P(\mu, \phi; \mu', \phi')\ P(\mu', \phi'; -\mu_0, \phi_0)$".

p. 543, 5th line from below: "*Mon. Wea. Res.*" should be "*Mon. Wea. Rev.*".

p. 545, line 18 from below: "CIO_x" should be "ClO_x".

p. 548, the last reference should be updated as fellows:

Li, Z., Cribb, M., and Trishchenko, A. (2002). Impact of surface inhomogeneity on solar radiative transfer under overcast conditions. *J. Geophy. Res.* **107**, D16, 10.1029/2001JD000976.

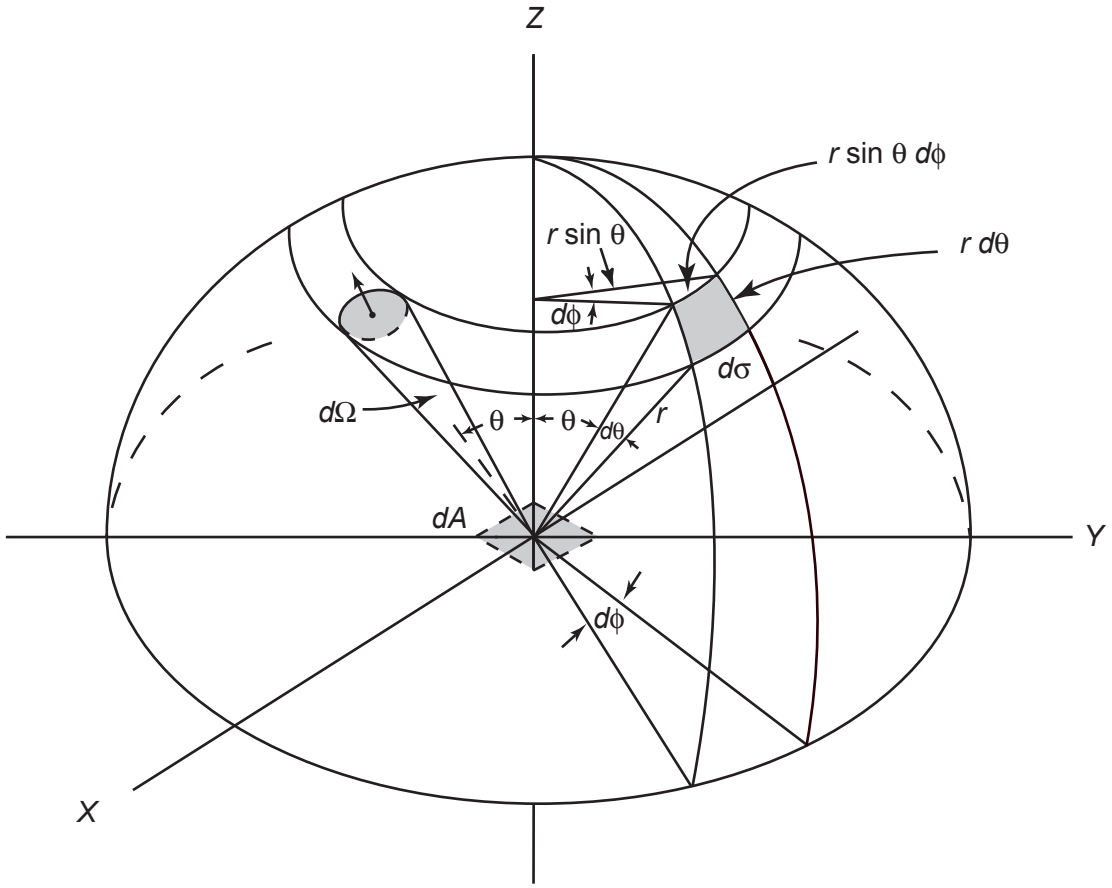

Fig. 1.3

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(Additional Errata)

p. 1, 3rd line in the 2nd paragraph: "$2.99793 \pm 1 \times 10^8$ m sec^{-1}" should be "$(2.99793 \pm 0.00001) \times 10^8$ m sec^{-1}".

p. 18, 4th line from the bottom: "NO_2" should be "N_2O".

p. 69, Figure 3.2: "NO_2" and "N_2O" should be switched.

p. 84, 5th line in the 3rd paragraph: "2.34 μm" should be replaced by "4.67 μm".

p. 133, Eq. (4.3.13): "ν_j" should be "$\Delta\nu_j$".

p. 134, Figure 4.7(a): Add two symbols of "×" in $4\Delta k$ near by the vertical axes.

p. 134, caption of Figure 4.7(a): "10 equal intervals" should be "nine equal intervals".

p. 150, Eq. (4.5.8): "$[1 - T_\nu(\bar{u}_w)[1 - T_\nu(\bar{u}_c)]$" should be "$[1 - T_\nu(\bar{u}_w)][1 - T_\nu(\bar{u}_c)]$".

p. 196, 1st line below Eq. (5.3.2): "0" should be "O".

p. 200, Figure 5.11: The direction of the x-axis should be reversed.

p. 208, last line: "Eq. (5.3.39b)" should be "Eq. (5.3.39a)".

p. 209, Eq. (5.3.42a): "$G_{1,2} = 4i_{1,2}/x$" should be "$G_{1,2} = 4i_{1,2}/x^2$".

p. 209, Eq. (5.3.42b): "$G^f = 4i_p/x$" should be "$G^f = 4i_p/x^2$".

p. 239, Eq. (5.5.7): "scalar ∇" should be "vector ∇".

p. 245, the last line: "four aerosol models" should be "five aerosol models".

p. 247, 3rd line below Eq. (5.5.25): "Eq. (5.4.23a)" should be "Eq. (5.4.22)".

p. 253, the second equation in Exercise 5.3: "vector ∇" should be "scalar ∇".

p. 257, 3rd line from the bottom of the 1st paragraph: "Section 1.4.4" should be "Section 1.4.3".

p. 269, Eq. (6.2.45): "$j = -n,\ldots - 0, \ldots, n$" should be "$j = -n,\ldots,-0, \ldots, n$".

p. 304, Eq. (6.5.6c): "$u_{-j} = -\mu_j$" should be "$\mu_{-j} = -\mu_j$".

p. 324, 6th line below Eq. (6.6.21): "Eq. (5.4.31)" should be "Eq. (5.4.31a)".

p. 328, Eq. (6.7.6a): "$\mathbf{I}(\tilde{\tau}, \mu', \phi')$" should be "$\mathbf{I}(\tilde{\tau}; \mu', \phi')$".

p. 339, 3rd line in the 3rd paragraph: "Section 8.3.3" should be "Section 8.6.3.2".

p. 342, Eq. (6.7.34), 1st line: "$(1 - \mu_0)^{1/2}$" should be "$(1 - \mu_0^2)^{1/2}$".

p. 347, 14th line from the bottom: "Radiative" should be "Radiation".

p. 355, 1st line: "increase" should be "decrease".

p. 362, 1st line in the 3rd paragraph: "resolution" should be "revolution".

p. 372, 7th line: “mean effective size” should be “mean effective radius”.

p. 392, item (c): “$R_i^{(n)} = \left|\hat{I}_i - I_i^n\right|/\hat{I}_i$” should be “$R_i^{(n)} = \left|\hat{I}_i - I_i^{(n)}\right|/\hat{I}_i$”.

p. 397, 3rd line below Eq. (7.4.49): “McMillan” should be “McMillin”.

p. 414, 8th line from the bottom: “impaired” should be “unpaired”.

p. 425, equation below Eq. (7.5.20): “$a(\nu_j)$” should be “$a(\tilde{\nu}_j)$”.

p. 429, 5th line from the bottom: “pulse” should be “pulse length”.

p. 444, 5th line in the 1st paragraph: “February 17” should be “August 7”.

p. 444, 5th line in the 2nd paragraph: “Service” should be “Services”.

p. 492, 2nd line below Eq. (8.5.14): “Eqs. (8.5.12)−(8.5.13)” should be “Eqs. (8.5.12)−(8.5.14)”.

p. 523, 5th line below Eq. (A.1): “$N_0 e^{-h\nu/KT}$” should be “$N_0 e^{-h\tilde{\nu}/KT}$”.

p. 525, 2nd line below Eq. (B.1): “$\nabla^2 = \partial^2/\partial^2 x + \partial^2/\partial^2 y + \partial^2/\partial^2 z$” should be “$\nabla^2 = \partial^2/\partial x^2 + \partial^2/\partial y^2 + \partial^2/\partial z^2$”.

p. 533, Eq. (E.2): “$(\mu^2 - 1),$” should be “$(\mu^2 - 1)^{\ell},$”.

p. 540, Exercise 4.5:

“$\dfrac{2\nu_0 C_y}{1+\nu_0 Cy(\delta/\nu_0)}$” should be “$\dfrac{2\nu_0 C_y}{1+\nu_0 C_y(\delta/\nu_0)}$”.

p. 545, in Dahlback, A., and Stamnes, K. (1991): “**59**” should be “**39**”.

p. 546, in Grody, N. C. (1993): “pp 91−144” should be “pp 259−334”.

p. 576, 20th line from the bottom in the left column: “TOM” should be “TOMS”.