An Introduction to Dynamic Meteorology

Devoted to discussing the book and all things related to dynamic meteorology.

Errata

This post contains a list of known errors in the book. Equations are rendered using MathJax, which requires Javascript. Please send email to the Gmail account holton.hakim if you know of errors not included below. Thank you --Greg Hakim

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- page 14, line 9: "measures" should be "measure"
- page 15, line 3: "...increases the westerly momentum..." is confusing, and should read, "...increases the zonal momentum..."
- section 2.1: all occurrences of "total derivative" should read "material derivative" since the former is used in contexts not related to rates of change following the motion. (Thanks Dale Durran)
- page 65, problem 2.10: this problem should be in the problem section for Chapter 3.
- page 91, line 4 should read "... Southern Hemisphere ($f < 0$) case."
- page 112, line 8: $\frac{U\theta^*}{\rho HL} + \frac{f\theta^*}{H}$ should read $\frac{U\theta^*}{\rho^* HL} + \frac{f\theta^*}{\rho^* H}$
- page 115, equation (4.31) is missing a minus sign.
- page 115, sentence above equation (4.32) should read, "Integrating the hydrostatic equation from the top of the fluid, $h(x, y, t)$, to level z, gives..."
- page 116, equation (4.35) and the logic leading to it, is wrong. Since pressure depends on (x,y,z,t), the total differential has contributions from those variables that give an identity for Dp/Dt. Instead, one may take $\frac{D}{Dt}$ of (4.32), giving

$$\frac{Dp}{Dt} = \rho_0 g\left(\frac{Dh}{Dt} - w\right)$$

  which yields (4.36) at $z = h$.
- page 117, Figure 4.11: although technically correct, the labels for θ on the right side of the figure should reflect z.
- page 118, the third line of section 4.5.1 should read "...density depends only on pressure." (thanks Leo Kroon).
- page 190, line -10: "...and if the zonal wind increases..." should be "...and a zonal wind that increases..."
- page 195, equation (6.37): a factor of f is missing from the right side. The full equation should read:

$$\mathrm{L}\frac{\partial p}{\partial t} = -\mathbf{V}_g\cdot\nabla_h(f\,\zeta_g) - \mathbf{V}_g\cdot\nabla_h\left(f^2\frac{\partial}{\partial z}\frac{d\bar{\theta}^{-1}}{dz}\,\theta\right)$$

  (Thanks Joel Norris)
- page 199, equation (6.47): the very last term should read

$$-v_j\frac{\partial}{\partial x_j}\frac{\partial\zeta}{\partial x_3}$$

  (Thanks Joel Norris)
- page 199, equation (6.49): the right hand side of the equation should have a minus sign.
- page 201, line below equation (6.55): $\partial v_i \partial x_3$ should read $\partial v_i/\partial x_3$
- page 240. The first sentence of constraint 1. should read, " If $\partial\bar{u}/\partial z^* = 0$ at $z^* = 0$ ..." (Thanks Nora Leps)

- page 268: Footnote 3 should read "...eddy stress (see footnote 2)..." (Thanks Ben Green)
- page 314, equation (9.58) should read: $m = rv + \frac{1}{2}fr^2$
- page 373, line 10: ..."water vapor increase..." should be "...water vapor increases..."
- page 401: equations (11.27) and (11.28) should read $-\partial\Phi'/\partial x$ and $-\partial\Phi'/\partial y$, respectively. (Thanks Rob Korty)
- page 499: in the statement of the divergence theorem $\mathbf{V} \cdot \mathbf{B}$ should read $\nabla \cdot \mathbf{B}$ (Thanks Fred Carr)
- page 499: in the statement of Stokes' theorem $\mathbf{V} \times \mathbf{B}$ should read $\nabla \times \mathbf{B}$ (Thanks Fred Carr)