Typos In “Classical Dynamics of Particles and Systems” by Thornton & Marion, 5th Edition (2008, reprint 2018)

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[N.B.] What follows is simply my own collection of typos and/or suggestions for improvements, confirmed by neither the publisher nor the author. So, caveat emptor!

- Page xiv : Chapter 10 title, “Nonintertial” $\rightarrow$ “Noninertial”
- Page 75 : 2nd sentence, “Using the technique of Example C.2 of Appendix C...” $\rightarrow$ “Example C.3”
- Page 111 : Example 3.2, “These equations can be coverted into...” $\rightarrow$ “converted”
- Page 117 : Figure 3-13, $2m\sqrt{gb}\,\dot{\theta} \rightarrow 2m\sqrt{g\ell}\,\dot{\theta}$
- Page 176 : Eqs.(4.50)-(4.51), $x+\epsilon \rightarrow x_0+\epsilon$
- Page 190 : Example 5.2, left-hand side, $\frac{GMm}{r^2} \rightarrow \frac{GMm}{R^2}$
- Page 190 : Example 5.2, “...account for more than 90 percent of the known mass...” $\rightarrow$ “80 percent”
- Page 223 : right below Eq.(6.81), $y(x)=y \rightarrow f(x)=y$
- Page 266 : Eqs.(7.157)-(7.159), to explicitly distinguish between the variations (δ) and the derivatives (d or ∂) of functions, replace all incidents of dH, dq_k, dp_k and dt with $\delta H, \delta q_k, \delta p_k$ and δt, respectively
- Page 275 : Figure 7-11, missing an axis label z
- Page 278 : Eq.(7.203), right-hand side, $-\langle\sum_\alpha \mathbf{F}_\alpha\cdot\dot{\mathbf{r}}_\alpha\rangle \rightarrow -\langle\sum_\alpha \mathbf{F}_\alpha\cdot\mathbf{r}_\alpha\rangle$
- Page 284 : Problem 7-30(a), right-hand side, $\frac{\partial g}{dt} \rightarrow \frac{\partial g}{\partial t}$
- Page 322 : Eq.(8.99), 3rd term, $-\frac{l^2\sin\alpha}{m^2\rho^3} \rightarrow -\frac{l^2\sin^2\alpha}{m^2\rho^3}$
- Page 338 : “VI. The total internal torque must vanish if the internal forces and central—that is, if $\mathbf{f}_{\alpha\beta}=-\mathbf{f}_{\beta\alpha}$, and...” $\rightarrow$ “VI. The total internal torque must vanish if the internal forces and central—that is, if $\mathbf{f}_{\alpha\beta}=-\mathbf{f}_{\beta\alpha}$ and if $\mathbf{f}_{\alpha\beta}$ lies on the straight line joining the two particles, $\mathbf{r}_{\alpha\beta}$, and...”
- Page 353 : Eq.(9.83), one can derive Eq.(9.87a) much faster by using the cosine law for the angle $\pi-\theta$ in Figure 9-11a, that is, $\frac{T_1}{T_0}=\frac{v_1^2}{u_1^2}=\frac{v_1'^2}{u_1^2}+\frac{V^2}{u_1^2}-2\frac{v_1'V}{u_1^2}\cos(\pi-\theta)=\left(\frac{m_2}{m_1+m_2}\right)^2+\left(\frac{m_1}{m_1+m_2}\right)^2+\frac{2m_1m_2}{(m_1+m_2)^2}\cos\theta$

- Page 367 : Example 9.11, "...dust particles of radius R_2 that are at rest." $\rightarrow$ "...dust particles of radius R_2 that are at rest throughout the scattering process (because dust particles are much heavier than the molecules)."
- Page 372 : 7th sentence, "...the instantaneous total mass of the space ship in m, and..." $\rightarrow$ "is"
- Page 376-377 : Example 9.12, "Using the result of Problem 9-57..." $\rightarrow$ "Problem 9-58"
- Page 389 : Eq.(10.7), right-hand side, first line, i and $\mathrm{x_i}$ $\rightarrow$ i and x_i
- Page 402 : equation right below Eq.(10.38), right-hand side, $\frac{1}{2m}$ $\rightarrow$ $\frac{l}{2m}$
- Page 403 : Figure 10-10, the arrow indicating θ_0 should start from the line with a label h, not from the line through the North pole (see the correct figure in the 4th edition)
- Page 434 : Example 11.7, "...(Equation 11.52 of Example 11.4)..." $\rightarrow$ "Example 11.6"
- Page 440 : footnote with marker *, "Tensors (and matrices) with this property are said to be Hermitean." $\rightarrow$ "Hermitian"
- Page 476-477 : Eqs.(12.28), (12.34)-(12.35), to distinguish between the coefficient in the kinetic energy written with generalized velocities (denoted by $M_{jk} = M_{jk}(q_l)$) and the leading term in its approximation near q_{l0} (denoted by $m_{jk} = M_{jk}(q_{l0})$), replace all incidents of m_{jk} with M_{jk}
- Page 477 : right after Eqs.(12.35), "...we cannot choose the constant term $m_{jk}(q_{l0})$ to be zero, so this leading term becomes..." $\rightarrow$ "$M_{jk}(q_{l0})$"
- Page 527 : Figure 13-4, caption, $f(\nu t) = 0$ $\rightarrow$ $f(vt) = 0$
- Page 528 : Eq.(13.66), to be consistent with Eq.(13.72) later, $\Psi(x,t) = \sum_r \Psi_r(x,t) = \sum_r \Psi_r(x) e^{i\omega_r t}$ $\rightarrow$ $\Psi(x,t) = \sum_r a_r \Psi_r(x,t) = \sum_r a_r \Psi_r(x) e^{i\omega_r t}$
- Page 530 : right below Eq.(13.74), "...which is time-dependent form of the one-dimensional wave equation,..." $\rightarrow$ "time-independent"
- Page 538 : 1st sentence in Section 13.9, "It was demonstrated in Section 3.9 that..." $\rightarrow$ "Section 3.8"
- Page 600 : Eq.(C.6), $y^n = r^2 e^{rx}$ $\rightarrow$ $y^{''} = r^2 e^{rx}$