

Analytical Mechanics for Relativity and Quantum Mechanics  
Errata (Second Edition)

- Page 267: In Figure 11.4, make replacements  $E_{05} \rightarrow E_{06}$  and  $G \rightarrow H$
- Page 280: Replace Exercise 11.10 by the following:

**Exercise 11.10** (a) Suppose the solar system to consist only of the sun and Jupiter, with Jupiter in a circular orbit at a distance from the sun equal to its present semi-major axis. What would be the distance between the center of mass of this solar system and the center of the sun? Would the center of mass be outside of the sun's photosphere?

(b) What would be the speed of the sun relative to an inertial system with origin at the center of mass?

- Page 280: In Exercise 11.11, eqn (11.58) should be eqn (11.59).
- Page 287: In eqn (12.16), make replacement  $dr \rightarrow s dr$
- Page 301: In eqn (13.55), the middle expression should read

$$- \sum_{\substack{k=0 \\ (k \neq 1)}}^D \dot{q}_k Q_k^{(NP)}$$

- Page 325: In the first line of Exercise 14.2, remove the "2" from that2
- Page 514: In eqn (22.30), make replacements  $2\pi a_1 \rightarrow \frac{2a_1}{k_1}$  and  $2\pi a_2 \rightarrow \frac{2a_2}{k_2}$
- Page 542: "simplicity Newton's second law" should read "simplicity of Newton's second law".

## Analytical Mechanics for Relativity and Quantum Mechanics

### Errata (First Edition)

Note: Some of these are corrected in the second printing.

- Page vii, fourth paragraph, sixth line, “an longer” should read “a longer”.
- Pages 8, 9, 223, 230, all superscripts (*ext*) should read (ext).
- Page 43, in first line of Exercise 2.7(b), “Find” should be replaced by “Use the definition of  $\mathbf{p}_n$  from eqn (2.104) to write”.
- Page 56, in line following eqn (3.48), change “fwith” to “with”.
- Page 76: In middle equation of eqn (4.23),  $\frac{\partial L(q, \dot{q}, t)}{\partial \dot{r}}$  should be  $\frac{\partial L(q, \dot{q}, t)}{\partial \dot{\theta}}$
- Page 93, in eqns (5.21 and 5.22) all  $\delta\alpha$  should read  $\delta a$ .
- Page 97 in footnote 31,  $\delta\alpha$  should read  $\delta a$ .
- Page 150, in next to last line of Exercise 7.7,  $Y_m^1(\theta, \phi)$  should read  $Y_1^m(\theta, \phi)$ .
- Page 200, “as  $\varepsilon \rightarrow 0$ ” should be moved from eqn (8.283) to the text following that equation.
- Page 207, eqns (9.34 and 9.35) should be centered.
- Pages 207, 209, 216, all superscripts (*cm*) should read (cm).
- Page 277, in eqn (11.51)  $t$  should be replaced by  $r$ .
- Page 287, in eqn (12.9)  $p_k(q, \dot{q})$  should read  $\partial p_k(q, \dot{q})$  in the middle expression.
- Page 303, in Exercise 12.3(c), “any two of  $L_x$ ,  $L_y$ , and  $L_z$  are” should read “any two of  $L_x$ ,  $L_y$ , and  $L_z$  are”.
- Page 307, last sentence in **Note to the Reader** should be replaced by, “Section 6.3 discusses this same issue in the context of the traditional theory.”
- Page 308, in the third line after eqn (13.11),  $\delta t = C_0\delta\alpha$  should read  $\delta t = \delta a C_0$ .
- Page 311, Theorem 13.4.1 should be titled “Hamilton’s Principle in Extended Phase Space”.
- Pages 379, 490, all  $q^{(ch)}$  should read  $q^{(ch)}$ .
- Page 431, in Exercise 17.4, replace  $a$  by  $a_i$  throughout. Also, “and  $a$  is a given constant” should read “and  $a_i$  are given constants”.
- Page 431, in Exercise 17.5, commas should be added after  $p_{2z}$  and  $Z$ .
- Page 432, in Exercise 17.6, parts a,b,b,c should be parts a,b,c,d.
- Pages 436, 451, 540, 550, 554, 556, 563, 588, “Desloges” should read “Desloge”.
- Page 437, in the Proof of Lemma 18.2.2, the last expression on the first line should read  $(\partial p(q, Q)/\partial Q)$ .
- Page 457, in Exercise 18.5, “number as discussed” should read “number discussed”.
- Page 507, in last line "simplicity Newton's second" should read "simplicity of Newton's second".