

Errata (Atmospheric & Space Flight Dynamics)

1. Equation (3.37) (p 52):

The last term within brackets on the right hand side should read $(7 \cos^2 \phi - 3)$ instead of $(7 \cos^2 \phi - 1)$.

2. MATLAB statement (line 8, p 69):

The element (2,1) of the matrix C should be the following: $-\cos(\phi) \cdot \sin(\psi) + \sin(\theta) \cdot \sin(\phi) \cdot \cos(\psi)$
This will change the final answers of Example 4.2.

3. Exercise 4.8 (p 114):

The **correct** second and third equations in the problem's statement should be the following:

$$\dot{v} = \frac{f_T - D}{m} - g \sin \phi$$

$$\dot{\phi} = \frac{L}{mv} - \left(\frac{g}{v} - \frac{v \cos \phi}{R_0 + h} \right)$$

4. Exercise 7.7 (p 192):

The **correct** equation this exercise statement is the following:

$$C = \frac{1}{2} V^2 - 2\boldsymbol{\omega} \cdot (\mathbf{R} \times \mathbf{V}) - \frac{(1-\mu)}{r_1} - \frac{\mu}{r_2}$$

5. Equation (10.6) (p 240): The “= (is equal to)” sign is missing at the end of the equation.

6. Equation (9.14) (p 225): The right-hand side should be multiplied by the term dh .

7. Equation (9.15) (p 225): The expression in the first pair of square brackets should read $1 + \frac{a(h-h_i)}{T_i}$.

8. Equation (10.10) (p 241): The last term should read $\rho \mathbf{v}(\nabla \cdot \mathbf{v})$ instead of $\rho \mathbf{v}(\nabla \cdot v)$.

9. Equation (10.13) (p 244): The last term on the left-hand side should read $\rho \mathbf{v}(\nabla \cdot \mathbf{v})$ instead of $\rho \mathbf{v}(\nabla \cdot v)$.

10. Figure 12.4 (p 292): The figure labels “ x_y ” and “ z_y ” should read “ x_v ” and “ z_v ”, respectively.

11. MATLAB statement, line 19, p 402: The **correct** statement is the following:

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>>[t,x]=ode45(@spacevscmg,[0 40],[0 0 0 0.1 -0.2 0.5 q0]');
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12. Equation (13.170) (p 441): The expression on the right-hand side of the equation should be divided by

the term v^e . The correct equation should thus read $\zeta = -\frac{C_{n_r}}{v^e} \sqrt{\frac{qSb^3}{32J_{zz}C_{n_\beta}}}$.

13. Equation (14.28) (p 466): The expression under square root should read $\zeta^2 - 1$. The correct equation should thus read $s_{1,2} = -\zeta \omega_n \pm \omega_n \sqrt{\zeta^2 - 1}$.

14. Last line, p 466, and fourth line, p 467: The phrase should read $0 \leq \zeta < 1$ instead of $0 \geq \zeta < 1$.