

# Errata

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**67** Table 4.1

There are minor errors in the last line. The values should be: 3.4, 11, 133 meter.

Eq. (4.26) should be  $\Delta h_{\max} = -3h_{\max} \Delta D / D$ .

**93** Problem 5.7

Question 5.7a is answered in the margin figure on page 84. Question 5.7b cannot be answered using the result of 5.7a.

**121** Formula (7.46)

Replace  $\sum_i \rightarrow \sum_k$

**162** Problem 9.4 (a)

The equations should be

$$u_x = a_x - \phi_z y + \phi_y z - \alpha v x + \frac{1}{2} \beta_x (z^2 + v (x^2 - y^2)) + v \beta_y x y$$

$$u_y = a_y + \phi_z x - \phi_x z - \alpha v y + \frac{1}{2} \beta_y (z^2 + v (y^2 - x^2)) + v \beta_x x y$$

$$u_z = a_z - \phi_y x + \phi_x y + z(\alpha - \beta_x x - \beta_y y)$$

Thanks to Anders Andersen for pointing out the error.

**210** Figure 13.1 Right

The choice of  $R/a = 1$  is meaningless, since it implies  $\dot{R} = 0$ , and thus no collapse.

**228** Problem 13.5, 1st line under the picture

$g_0 = 981 \text{cm}^2 \text{s}^{-1}$  should be  $g_0 = 981 \text{cm s}^{-2}$ .

**247** Example 15.1

One should strictly speaking use the viscosity of water at zero Celsius rather than the 20 C value from table 15.1. That will increase the estimated water layer thickness by roughly a factor 2, but leave the decay time unchanged. Thanks to Anders Andersen for pointing this out.

**253** Example 15.4

The Reynolds number of olive oil should be 138 and the flow is laminar.

**260** Problem 15.6 (a)

Replace  $(1 - f(s))$  by  $f(s)$ . Thanks to Predrag Cvitanovic's students for pointing out the error.

**330** Above formula (19.22)

"or order unit" should be "of order unity"

342 Formula (20.8)

Replace  $\oint_V \rightarrow \oint_S$ .

368 Equations (21.49)

In the expressions for  $h$  and  $\eta$ , replace  $c^4$  by  $\alpha^2 c^4$ . This only changes the margin table (p. 369) value from  $c = 5.7$  to  $c = 5.4$ .

384 Equation (22.47) should be replaced by

$$F'[s] = A e^{-\frac{1}{4} \text{Pr} s^2} - \frac{1}{\pi} \int_0^s e^{-\frac{1}{2} u^2 - \frac{1}{4} \text{Pr}(s^2 - u^2)} du$$

435 Line above equation (25.59).

Reference (25.29a) should be (25.29c). Thanks to Raphael Hirschi.

436 Rise of shallow-water swell. Third line.

Reference (24.37) should be (25.32). Thanks to Raphael Hirschi.

437 Next to last line on page 437, 5th word.

Replace "er" by "we". Thanks to Raphael Hirschi.

448 Above eq. (26.11).

Replace "mass flux  $Q$ " by "volume flux  $Q$ ". Thanks to Niels Dyreborg Nielsen.

459 The weakening shock. Minor numeric errors in first paragraph.

$\text{Ma}_1 = \sqrt{2/(\gamma - 1)} = 2.24$ ,  $\sigma = 4.67$ ,  $v_1 = 769$  m/s,  $p_2 = 5.67$  atm,  $\rho_2 = 3.60$  kg/m<sup>3</sup>,  $u_2 = 513$  m/s,  $T_2 = 554$  K,  $t = 134$  s,  $R = 257$  m,  $\text{Ma} = 1.08$ .

487 Fig. 28.2 caption, line 2

Replace  $\delta = 5\sqrt{x}$  by  $\delta = 5\sqrt{\nu x/U}$ .

514 3rd line from bottom

The 10% should be replaced by 20%.

602 Line (B.31)

Replace  $\hat{a}_x \cdot \hat{a}_x$  by  $\hat{a}_x \cdot \hat{a}_y$ . Thanks to Jakob Bruun Pedersen.

613 Line below eq. (C9)

Replace (??) by (B.58). Thanks to Jordi Ortin.

624 Equation (D.34)

Replace  $\hat{e}_z$  by  $\hat{e}_\phi$ .

634 Answer 5.7

Answer is incorrect. See Erratum **93** Problem 5.7.

637 Answer 7.9 second equation middle

Replace  $\nabla_z u_z$  by  $\nabla_x u_z$ . Thanks to Andreas Havreland.

640 Answer 10.3 (a)

Replace  $L_0$  by  $L_z$  in the last line. Thanks to Andreas Havreland.

646 Answer 16.1 first line

Replace  $x = 0$  with  $y = 0$ . Thanks to Niels Dyreborg Nielsen.

664 [Batchelor 67]

Should be [Batchelor 1967]