

ERRATA

Misprints, corrections and comments etc., relating to the book

“*Ocean Waves and Oscillating Systems*”, ISBN 0-521-78211-2.

List of contents, page vii: The title (heading) of Section 5.9 should not be more than “Motion Response”.

Preface, page x, line 3: Between “- - - of the present book.” and “I am also in - - -”, insert the following sentence: “He and Torkel Bjarte-Larsson, a course participant from 1999, used the computer code WAMIT to work out Figures 5.8 and 5.9.”

Page 11, Table 2.1: $+\frac{\hat{x}}{2}e^{-i\omega t}$ should be $+\frac{\hat{x}^*}{2}e^{-i\omega t}$

Page 18, Eq. (2.77): $\hat{F}\hat{u}^* + \hat{F}\hat{u}^*$ should be $\hat{F}\hat{u}^* + \hat{F}^*\hat{u} +$

Page 35, first line below eq. (2.192) could preferably be: “If this is not true, we may conveniently subtract the singular part of $H(\omega)$. Let”

Page 35, line 4 from below: “casual” should be “causal”

Page 53, Figure 3.3: R_f should (two places) be R_m

Page 63, line 9: “kinetic” should be “kinematic”

Page 67, fourth line below eq. (4.64): To be more correct, “Eq. (4.62) and” could preferably be replaced by

“Eq. (4.62) – assuming ω is real – and”

Page 76, Eq. (4.120): $|\hat{\eta}_f|^2 + |\hat{\eta}_f|^2 +$ should be $|\hat{\eta}_f|^2 + |\hat{\eta}_b|^2 +$

Page 80: Three places in Eqs. (4.152)&(4.153),

the lower integration limit h should be corrected to $-h$.

Page 83, eq. (4.168): $32 \times (10^3 \text{ N} \hat{=} 3.2 \text{ tons})$ should be $32 \times 10^3 \text{ N} (\hat{=} 3.2 \text{ tons})$

Page 103, line 13: “in Eq. (4.274),” should be “in Eq. (4.273),”

Page 107, eq. (4.324): $\cos\left(\frac{\omega t - \omega^2 \ell}{g}\right)$ should be $\cos(\omega t - \omega^2 \ell/g)$

Page 110: Observe that there is no minus sign in line 3 from bottom:

The line reads: $Z'_n(0) = \frac{\omega^2}{g} Z_n(0)$

Page 110, bottom line; and also page 111, line 2: m_m should be m_n .

Page 112, Problem 4.8, line 3: Ae^{-kx} should be Ae^{-ikx}

Page 115, Problem 4.12, two places on line 8: “cos h ” should be “cosh”

Page 117, Problem 4.14, line 9: $\eta_r =$ should be $\hat{\eta}_r =$

Page 117, Problem 4.15, line 4: $\eta =$ should be $\hat{\eta} =$

Page 123, eq. (5.27): $F_{e,j} =$ should be $\hat{F}_{e,j} =$

Pages 131 and 132, in eqs. (5.77), (5.80), (5.81) and (5.86), a minus sign is missing on the right-hand side, thus: $=$ should be $= -$

Pages 133 and 135: On the graph of Figure 5.6 and on the upper right graph of Figure 5.7, the symbol ε is used to indicate non-dimensionalised radiation resistance. It would have been better if, instead, the symbol ϵ had been used, because this is the symbol used in the two figure captions, and also in the main text on pages 125, 133, 134, 190, 191 and 192. (Alternatively, the symbol ϵ in the captions and in the main text could have been changed to ε .)

Page 142, In line 4 of the caption to Figure 5.11:

Replace $k_3/(\rho g a^2)$ by $k_3/(\pi \rho g a^2)$.

Page 166: In the last term (the summation term) of Eq. (5.247):

Replace q by q' and j by q . Then Eq. (5.247) could preferably read:

$$\hat{F}_{e,j} = \hat{F}_{e,q} \approx \rho g \hat{\eta}_0 S_w \delta_{q3} + \rho V \hat{a}_{0q} + \sum_{q'=1}^3 m_{qq'} \hat{a}_{0q'}$$

Also in Eq. (5.248), $\hat{F}_{e,q}$ could preferably be replaced by $\hat{F}_{e,j} = \hat{F}_{e,q}$

Page 169, Figure 5.19: Below the indicated horizontal still-water surface, a few horizontal dashed lines (as e.g. in Figure 5.18) are missing in the vertical-section upper part of the Figure 5.19.

Page 181: The title (heading) of Section 5.9 should be **Motion Response**.

Correspondingly, the page header on pages 181, 183 and 185 should only be: 5.9 MOTION RESPONSE

Page 184, eq. (5.323): $S_b/(i\omega)$ should be S_b/ω

Page 194, Problem 5.15(b), line 4: “heave velocity is given” should be “heave velocity is given as”

Page 207, line 7 below figure caption: $E_{u,P} > 0$ should be $W_{u,P} > 0$

Page 207, line 8 below figure caption:

“a principle⁶⁷ which” should be “a principle^{66,67} which”

Page 211, lines 20, 21, 22 and 27 (four places): $E_{u,P}$ should be $W_{u,P}$

Page 211, lines 5-6: Replace

“The following paragraphs, as an example, give - - -” by

“The following paragraph, as an example, gives - - -”

Page 214, second line below eq. (6.62): $\hat{\mathbf{u}} = \hat{\mathbf{U}} + \hat{\boldsymbol{\delta}}$ should be $\hat{\mathbf{u}} = \mathbf{U} + \boldsymbol{\delta}$

Page 256, fourth line above eq. (7.200): “heave mode 2 (i.e.,” should be
“heave mode (i.e.,”

Page 260, three last lines: Four places, $\hat{\delta}$ should be δ

Page 272, left column: Between lines 27 and 28 insert:

intrinsic mechanical impedance, 184, 203, 204

intrinsic mechanical resistance, 205

Page 273, right column: Line 12 from below should read:

matrix singularity, 172, 174, 175, 181, 196, 213, 218, 221

Page 275, right column, line 6 from below: “chanel” should be “channel”

Comments, additional information, etc.

Page 26: Comment to the first line after eq. (2.128): Eq. (2.147) proves this statement of commutativity.

Page 57: In the text of Problem 3.8, on the third line, “Eqs. (3.42) - (3.45)” could be changed to “Eqs. (3.42) - (3.46)” provided the following is added at the end of the expression on the second line: $= 1 - |1 - 2R_r\hat{u}/\hat{F}_e|^2$

Page 185: In order to insert an additional comment, the second line after eq. (5.327) could be replaced by: “cylinder is relatively high ($l/a \gg 1$). For the floating, truncated, vertical cylinder discussed in Subsection 5.2.4 (cf. Figure 5.7), condition $l/a \gg 1$ is not satisfied, and the added mass appears to exceed the value given by Eq. (5.327) by a factor in the range between 1.4 and 1.7. If $l \gg a$, we have $m_m \gg m_{33}$ and the angular”.

Page 201, inequalities (6.13):

When deriving inequality (6.14), Budal^{67,68} considered a tall cylindrical body with relatively small water-plane area. Then, with optimum phase ($\gamma_3 = 0$), the heave amplitude $|\hat{s}_3|$ may be significantly larger than the wave amplitude $|A|$. Inequalities (6.13) are based on this assumption. However, for a wave-interacting low cylindrical body with relatively large water-plane area, the heave amplitude should not exceed the wave amplitude. Moreover, the excitation force amplitude is bounded by the body's buoyancy force at equilibrium in still water. In this case, inequalities (6.13) are to be replaced by

$$|\hat{u}_3| < \omega|A|, \quad |\hat{F}_{e,3}| < \rho g V / 2,$$

as suggested by Rod Rainey [Rainey, 2003, private communication]. This alternative to inequalities (6.13) leads, however, to the same fundamental result, Budal's upper bound (6.14).

Page 205: The last line of Eq. (6.30) could alternatively be written as:

$$= \frac{2}{\pi} \int_0^\infty \left\{ \frac{|F_e(\omega)|^2}{8R_i(\omega)} - \frac{\alpha(\omega)}{8R_i(\omega)} \right\} d\omega$$

Corresponding changes in Eq. (6.33) and (6.35) would make comparison with Eq. (6.25) more direct and easy.

Page 263, Bibliography, entry # 7:

The review prepared by the ECOR (Engineering Committee on Oceanic Resources) Working Group on Wave Energy Conversion, has been published as a book by Elsevier 2003 under the title "*Wave Energy Conversion*" (ISBN 0-08-044212-9).

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