

Foundations of Vibroacoustics

Errata and Clarifications

June 13, 2020

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- p27, Third line under heading 1.4.11, change Equation (1.38) to Equation (1.54).
- p27, Fourth line under heading 1.4.11, change Equation (1.38) to Equation (1.54).
- p80, Figure 2.11, change M_{xy} to $M_{x\theta}$.
- p80, In Equation (2.66) and in the line immediately after, change J to J_x .
- p80, In Equations (2.66), (2.67) and (2.68) change M_{xy} to $M_{x\theta}$.
- p80, lines immediately after Equations (2.66) and (2.67), change M_{xy} to $M_{x\theta}$.
- p81, In Equation (2.69) change M_{xy} to $M_{x\theta}$.
- p81, In Equations (2.70), (2.71) and (2.72) change J to J_x .
- p81, In Equations (2.72), (2.73) and (2.74) change c_s to c_T .
- p81, 2 lines above Equation (2.74) change c_s to c_T .
- p83, In Equations (2.79) and (2.80) change J to J_y .
- p83, Second and third lines following Equation (2.79) change J to J_y .
- p83, Second line following Equation (2.79) change “transverse axis in the neutral plane” to “y-axis, which is the axis normal to the plane defined by the $x - z$ axes in Figure 2.13”.
- p84, In Equations (2.87), (2.88) and (2.90) change J to J_y .
- p85, Table 2.2 caption and column 3 header, change J_x to J_y .
- p85, Table 2.2, in all figures in column 1, change y to z and x to y .
- p86, In Figure 2.15, change \bar{y} to \bar{z} .
- p86, In Equation (2.92), change y to z .
- p86, In Equation (2.93), change \bar{y} to \bar{z} and y to z .
- p86, In Equation (2.94), change \bar{y} to \bar{z} and y to z .
- p86, In Equations (2.95), (2.97) and (2.98) change J to J_y .
- p87, In Equations (2.102) and (2.103) change J to J_y .

- p88, In Equations (2.105), (2.107), (2.108), (2.111) and (2.113) change J to J_y .
- p89, In Equations (2.116) and (2.123) change J to J_y .
- p90, In Equations (2.128) and (2.132) and in the line immediately above Equation (2.132), change J to J_y .
- p91, In Equations (2.138) and (2.139) change J to J_y .
- p91, 4 lines after Equation (2.139), change “ J_{yy} is used and vice versa” to “ J_y is used and for motion in the y -direction, J_z is used.”
- p92, Table 2.3 column 3, change J to J_y in 5 places.
- p93, In Equation (2.142) change J to J_y .
- p101, Line following Equation (2.184), add “and the units of M_x , M_y and M_{xy} are moment per unit length”.
- p104, In equation (2.214) delete the “2” multiplier on the RHS.
- p104, In equations (2.214) and (2.215), change $\sqrt{\frac{D}{\rho_m}}$ to $\sqrt{\frac{D}{\rho_m h}}$.
- p105, Table 2.8, change $\sqrt{\frac{D}{\rho_m}}$ to $\sqrt{\frac{D}{\rho_m h}}$ in 4 places.
- p106, captions for Tables 2.9 and 2.10, change $\sqrt{\frac{D}{\rho_m}}$ to $\sqrt{\frac{D}{\rho_m h}}$ in 4 places.
- p163, In Equations (4.29) and (4.30), change J to J_y .
- p163, 2 lines below Equation (4.29), change J to J_y .
- p164, In Equations (4.33) (4.34), (4.35), (4.38) and (4.39), change J to J_y .
- p165, In Equation (4.40), change J to J_y .
- p165, In Table 4.1, column 4, change J to J_x .
- p167, replace the 3rd, 4th and 5th lines beneath Table 4.2 with “ $J_x =$ polar second moment of area of the beam cross section about the longitudinal x -axis”.
- p167, last line, change “ $a =$ ” to “ $2a =$ ”.

p167, 12th and 13th lines beneath Table 4.2, change J to J_y .

p273, Equation (6.14), on the far left hand side, remove “ $E_s =$ ”.

p275, In the caption of Table 6.1, change Z_s to Z_A and add the following. For acoustic systems, the real part of the acoustic power input, Π_{in} , can be expressed as,

$$\Pi_{\text{in}} = \frac{\langle p^2 \rangle}{\text{Re}\{Z_A\}}.$$

p275, Table 6.1, column header, change Z_s to Z_A .

p276, Equation (6.21), should be $\langle \text{Re}\{Z_F\} \rangle_{S,\Delta} = \frac{2m}{\pi n(\omega)}$.

p276, Equation (6.22), should be $\langle \text{Re}\{Z_A\} \rangle_{S,\Delta} = \frac{\rho c^2 n(\omega)}{8\pi V}$, where V is the volume of the space.

p277, Table 6.2, change the equation for c_T to $c_T = c_g = \sqrt{\frac{GJ'}{\rho_m J_x}}$.

p277, 8th line under Table 6.2, change J to J_y and add two new definitions.

J_x is the polar second moment of area of the beam cross-section about the longitudinal x -axis.

J' is the torsion constant for the beam cross-section (equal to the polar second moment of area, J_x , for circular-section beams).

p277, Table 6.2, bottom equation, replace ρ with ρ_m .

p278, Table 6.3, top equation, remove “ $= c_g$ ” and after the equation, add another equation

$$\text{as follows: } c_g = 2c_B = \sqrt{\frac{2c_L h \omega}{\sqrt{3}}}.$$

p278, Table 6.3, following the equation for in-plane compressional modes add:

$$c_L = c_g = \sqrt{\frac{E}{\rho_m(1 - \nu^2)}}.$$

p286, line above equation (6.50), replace (6.48) with (6.47).

p286, Equation (6.53), replace π with 2.