Errata

Chapter 2

p. 25/(2.2.11-12) forgotten derivative $h/dt \to \mathrm{d}h/\mathrm{d}t$:

$$F_1 \frac{h_1}{\mathrm{d}t} = q_0 - q_1$$
$$F_2 \frac{h_2}{\mathrm{d}t} = q_1 - q_2$$

change for

$$F_1 \frac{\mathrm{d}h_1}{\mathrm{d}t} = q_0 - q_1$$
$$F_2 \frac{\mathrm{d}h_2}{\mathrm{d}t} = q_1 - q_2$$

p. 26/(2.2.18) $F_1 \to F_2$:

$$\frac{dh_2}{dt} = \frac{k_{11}}{F_1}\sqrt{h_1 - h_2} - \frac{k_{22}}{F_2}\sqrt{h_2}$$

change for

$$\frac{dh_2}{dt} = \frac{k_{11}}{F_2}\sqrt{h_1 - h_2} - \frac{k_{22}}{F_2}\sqrt{h_2}$$

p. 37/(2.2.80) : wrong sign: $+G[f(c_{xW})] \to -G[f(c_{xW})]$

p. 47/11,bottom parentheses:

$$+\left(-\frac{q}{V} - \frac{\alpha F}{V\rho c_p} + \frac{(-\Delta H)}{\rho c_p}\dot{r}_\vartheta(c_A^s, \vartheta^s)(\vartheta - \vartheta^s)\right)$$

change for

$$+\left(-\frac{q}{V} - \frac{\alpha F}{V\rho c_p} + \frac{(-\Delta H)}{\rho c_p}\dot{r}_\vartheta(c_A^s, \vartheta^s)\right)(\vartheta - \vartheta^s)$$

Chapter 3

p. 58_{13} wrong sign $- \to +$:

$$= \frac{1}{2j}\left[\frac{e^{-(s-j\omega)t}}{-(s-j\omega)}\right]_0^\infty + \frac{1}{2j}\left[\frac{e^{-(s+j\omega)t}}{-(s+j\omega)}\right]_0^\infty$$

$\to$

$$= \frac{1}{2j}\left[\frac{e^{-(s-j\omega)t}}{-(s-j\omega)}\right]_0^\infty - \frac{1}{2j}\left[\frac{e^{-(s+j\omega)t}}{-(s+j\omega)}\right]_0^\infty$$

p. 61 (Final value theorem, proof) forgotten derivative $f/dt \to df/dt$:

$$\int_0^\infty \frac{f(t)}{\mathrm{d}t} e^{-st} \mathrm{d}t = sF(s) - f(0)$$

and taking the limit as $s \to 0$

$$\begin{aligned}
\int_0^\infty \frac{f(t)}{\mathrm{d}t} \lim_{s\to 0} e^{-st} \mathrm{d}t &= \lim_{s\to 0}[sF(s) - f(0)] \\
\lim_{t\to\infty} f(t) - f(0) &= \lim_{s\to 0}[sF(s)] - f(0) \\
\lim_{t\to\infty} f(t) &= \lim_{s\to 0}[sF(s)]
\end{aligned}$$

change for

$$\int_0^\infty \frac{\mathrm{d}f(t)}{\mathrm{d}t} e^{-st} \mathrm{d}t = sF(s) - f(0)$$

and taking the limit as $s \to 0$

$$\begin{aligned}
\int_0^\infty \frac{\mathrm{d}f(t)}{\mathrm{d}t} \lim_{s\to 0} e^{-st} \mathrm{d}t &= \lim_{s\to 0}[sF(s) - f(0)] \\
\lim_{t\to\infty} f(t) - f(0) &= \lim_{s\to 0}[sF(s)] - f(0) \\
\lim_{t\to\infty} f(t) &= \lim_{s\to 0}[sF(s)]
\end{aligned}$$

p. 75/(3.2.43) forgotten derivative $x/dt \to dx/dt$:

$$\frac{\boldsymbol{x}(t)}{\mathrm{d}t} = \boldsymbol{A}\boldsymbol{x}(t)$$

change for

$$\frac{\mathrm{d}\boldsymbol{x}(t)}{\mathrm{d}t} = \boldsymbol{A}\boldsymbol{x}(t)$$

p. 84/3 : Index missing F_1: where $a_1 = T_1 = (2F_1\sqrt{h_1^s})/k_{11}$

p. 85/6 : Sign

$$a_{21} = \frac{k_{11}}{2F_2\sqrt{h_1^s - h_2^s}}$$

Chapter 4

p. 123$_6$ incorrect reference to equation: Substracting (4.2.37) from → Substracting (4.2.38) from

p. 134$_{10}$, 140$_2$, 140$_1$, 141$_2$, 143$_{15}$ Show degrees correctly 5 times: $^o \to ^\circ$

p. 139, (4.3.11) missing j in denominator

$$y(t) = Z_1 A_1 \left[\frac{-\omega T_1}{(\omega^2 T_1^2 + 1)} \frac{\mathrm{e}^{-\mathrm{j}\omega t} + \mathrm{e}^{\mathrm{j}\omega t}}{2} + \frac{1}{(\omega^2 T_1^2 + 1)} \frac{\mathrm{e}^{\mathrm{j}\omega t} - \mathrm{e}^{-\mathrm{j}\omega t}}{2} \right]$$

$\rightarrow$

$$y(t) = Z_1 A_1 \left[\frac{-\omega T_1}{(\omega^2 T_1^2 + 1)} \frac{\mathrm{e}^{-\mathrm{j}\omega t} + \mathrm{e}^{\mathrm{j}\omega t}}{2} + \frac{1}{(\omega^2 T_1^2 + 1)} \frac{\mathrm{e}^{\mathrm{j}\omega t} - \mathrm{e}^{-\mathrm{j}\omega t}}{2j} \right]$$