

## Errata

*Fundamental Limitations in Filtering and Control*  
M.M. Seron, J.H. Braslavsky and G.C. Goodwin  
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**Page 9** line 14: read “Laplace transform”.

**Page 9** line -3: read “(i.e.  $r(t) = 1$ ,  $d(t) = 0$ ,  $\forall t$ )”.

**Page 11** line 19: read “the fact that  $r = 1$ ”.

**Page 11** line 20: delete “ $-d(t)$ ” from the equation.

**Page 14** Figure 1.3:  $t_r$  is the time corresponding to the point where the two dashed lines intersect each other.

**Page 37** line -6: read “Note that  $n$  is positive if  $s_0$  is a zero of  $f$ , and  $n$  is negative if  $s_0$  is a pole of  $f$ ”.

**Page 40** line 7: delete parentheses in “(Bode 1945)”.

**Page 43** equation (2.35): the signs of the first and third terms to the right of the last equality should be minus.

**Page 44** equation (2.37): the factors between brackets should be  $\frac{s+p}{s-p}$  and  $\frac{s-q}{s+q}$ .

**Page 54** line 5: read “We choose these names”.

**Page 65** footnote: read “ $\lim_{R \rightarrow \infty} R^{-1} \sup_{\theta \in [-\pi/2, \pi/2]} |f(Re^{j\theta})| = 0$ ”.

**Page 69** line 4: read “the weighted length of such an interval”.

**Page 78** equation (3.50) should be

$$\begin{aligned} \Theta_{z_0}(\theta_1) &\triangleq \frac{1}{2} \int_{-\theta_1}^{\theta_1} W_{z_0}(\theta) d\theta \\ &= \arctan \left[ \frac{r_0 + 1}{r_0 - 1} \tan \frac{\theta_1 - \theta_0}{2} \right] + \arctan \left[ \frac{r_0 + 1}{r_0 - 1} \tan \frac{\theta_1 + \theta_0}{2} \right] \end{aligned} \quad (3.50)$$

**Page 79** equation (3.52): all the factors 2 in the exponents should be removed.

**Page 82** equation (3.59): all the factors 2 in the exponents should be removed.

**Page 100** line 12: read “zeros of  $\rho_k$  on the RHS”.

**Page 102** equation (4.30): the exponent of the RHS should be

$$\frac{\Theta_q(\omega_1)}{\pi - \Theta_q(\omega_1)}. \quad (*)$$

**Page 103** the RHSs of both equations should be 1, not 0.

**Page 108** the exponents of the RHSs of equations (4.38) and (4.39) should be (\*).

**Page 111** equation (4.43): the first factor in the numerator of the entry (1,2) should be  $(1 - s)$ .

**Page 148** the name of Remark 6.3.2 should be “Nonminimum Phase Plant Zeros”.

**Page 151** the name of Remark 6.4.1 should be “Nonminimum Phase Plant Zeros”, and that of Remark 6.4.2 should be “Nonminimum Phase Hold Zeros”.

**Page 154**  $e^{-s\tau_P}$  should be  $e^{-s\tau_G}$  on the RHS of the displayed equation in the proof of Theorem 6.4.6.

**Page 173** line 13: read “unstable poles shared by  $G_z$  and  $G_y$ ”.

**Page 192** line -9: read “By changing the values of  $k$  and  $\alpha_1$  in  $W_1$ ”.

**Page 202** equation (9.10): the exponent of the RHS should be

$$\frac{\Theta_p(\omega_1)}{\pi - \Theta_p(\omega_1)}.$$

**Page 261** line 15: read “and let  $\mathcal{W} \subset \mathcal{L}_2$ ”.

**Page 300** last equation:  $j$  should multiply the second integral.

**Page 301** equation (A.47): the left hand sides should be evaluated at  $(\sigma_0, \omega_0)$ .

**Page 312** line -6: the argument of the limit for  $\nu$  should be  $\infty$  (not 0).

## Acknowledgement

We are indebted to Jim Freudenberg, who pointed out several of the above typos.