Appendix B

Routh-Hurwitz table

The Routh-Hurwitz table for characteristic equation is drawn by comparing Eq. 5.25 to the Eq. B.1

$$a_0 s^4 + a_1 s^3 + a_2 s^2 + a_3 s^1 + a_0 = 0 \tag{B.1}$$

The Routh-Hurwitz table is drawn as below.

Table B.1 Routh-Hureitz table.

S^4	a_0	a_2	a_4
S^3	a_1	a_3	
S^2	b_1	b_2	
S^1	c_1		
S^0	d_1		

$$a_0 = \tau_{as}\tau_{tg}CR_L \tag{B.2}$$

$$a_1 = \tau_{tg}CR_Lk_{dh} + \tau_{as}\tau_{tg}k_{dg} + \tau_{as}CR_L \tag{B.3}$$

$$a_2 = \tau_{tg}k_{dg}k_{dh} + \tau_{as}k_{dg} + k_{dh}CR_L \tag{B.4}$$

$$a_3 = k_{dh}k_{dg} \tag{B.5}$$

$$a_4 = k_{ng}k_{nh} \tag{B.6}$$

$$b_1 = \frac{a_1a_2 - a_0a_3}{a_1} \tag{B.7}$$

$$b_2 = k_{ng}k_{nh} \tag{B.8}$$

$$c_1 = k_{dg}k_{dh} - \frac{a_1a_4}{b_1} \tag{B.9}$$

$$d_1 = k_{ng}k_{nh} \tag{B.10}$$

$$\tag{B.11}$$