Task 2

Since the plant have a transfer function as,

$$G_o(s) = \frac{25.15}{s + 2.157} \tag{1}$$

and an $A_m(s)$ of same order should be choosen, the following functions is used,

$$A_m(s) = s + \omega_1$$
$$A_o(s) = s + \omega_2$$

with

$$\omega_1 = 10$$
$$\omega_2 = 5$$

These values gives the plot seen in figure 1

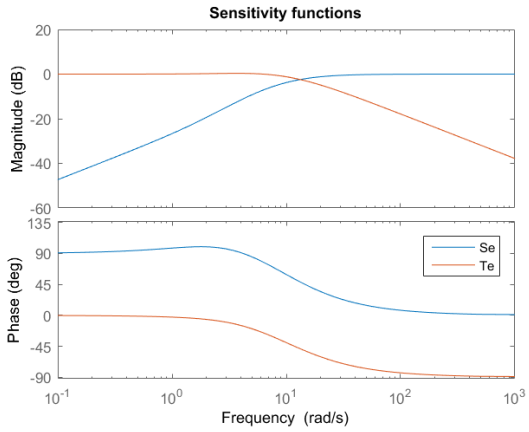

Figure 1: The sensitivity and conmplementary sensitivity function

when the poles for $A_0(s)$ is increased to five times $A_m(s)$ the results in figure 2 is obtained.

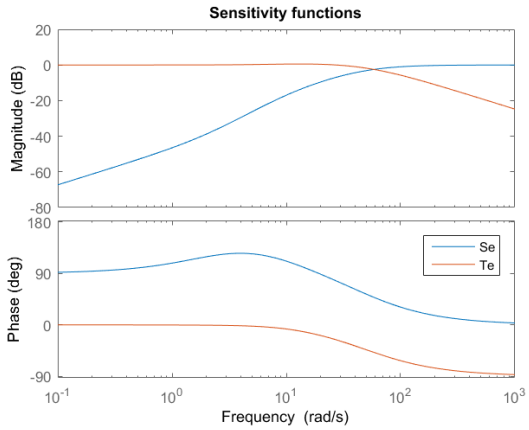

Figure 2: S_e and T_e with five times faster $A_o(s)$ poles