Práctica 4 Electrónica

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1. **Parámetros:**

Rr': 0.5 Ω

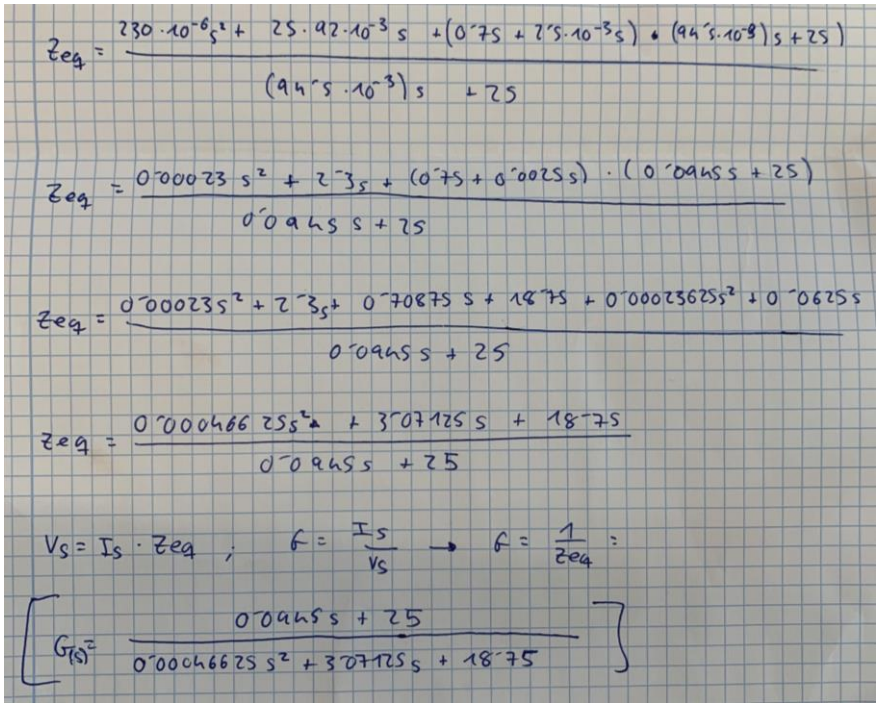
Lr´: 2.5 mH

Rs: 0.75 Ω
Ls: 2.5 mH

Lm: 92 mH

D: 0.02

2. **Ecuación diferencial**

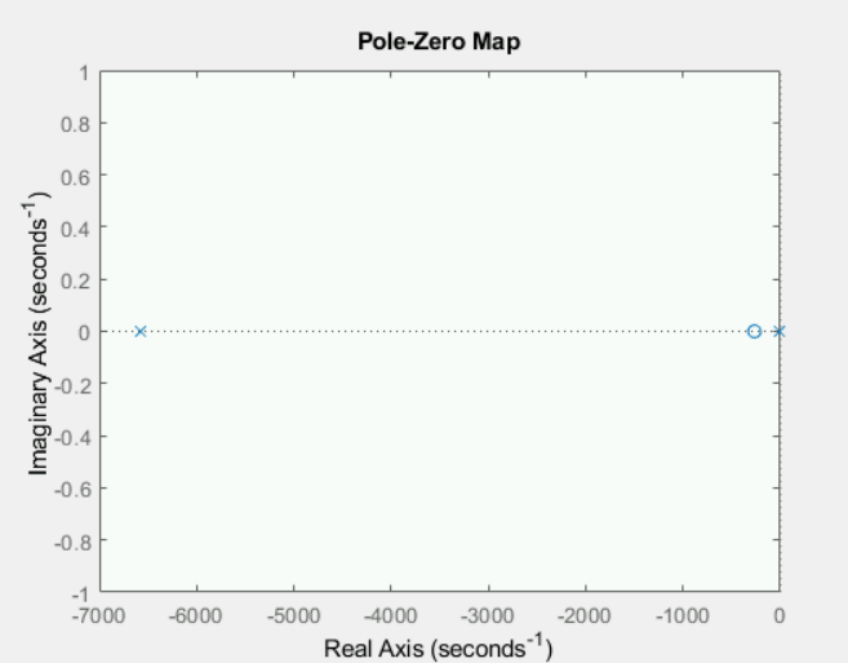


3. **Modelo del sistema**

```
>> G=tf([0.0945 25],[0.000466625 3.07125 18.75])

G =

            0.0945 s + 25
  -------------------------------
  0.0004666 s^2 + 3.071 s + 18.75

Continuous-time transfer function.
```

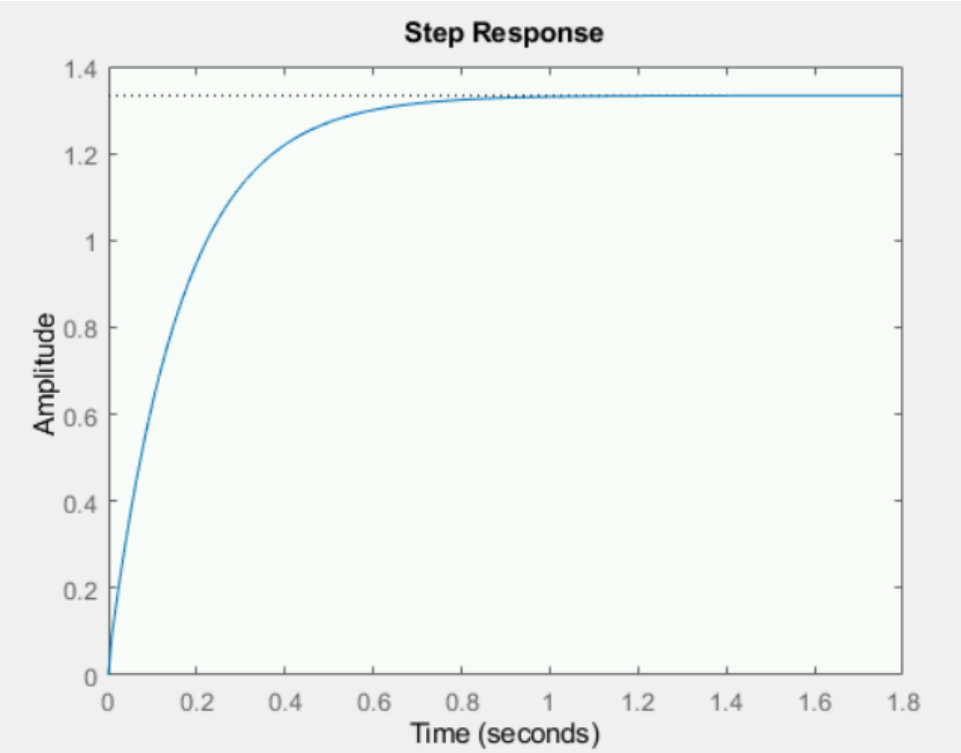
4. Polos y ceros del sistema

Using the command “pzmap(G)” in Matlab



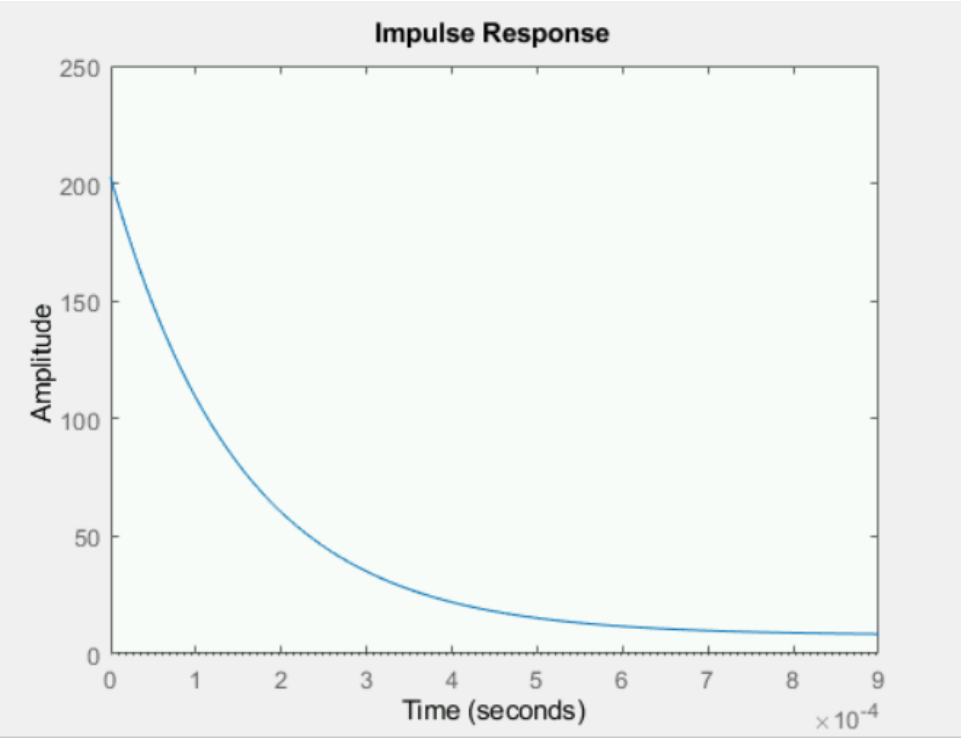
5. Ganancia estática

Using the command “step(G)” in Matlab:



6. **Respuesta al impulso**

Using the command “impulse(G)” in Matlab:



7. **Tiempo de subida**

```
>> r=step(G)

r =

         0
    0.0883
    0.1443
    0.1978
    0.2489
    0.2977
    0.3443
```

```
>> [r,t]=step(G)

r =

         0
    0.0883
    0.1443
    0.1978
    0.2489
    0.2977
    0.3443
    0.3889
```

```
t =

         0
    0.0075
    0.0151
    0.0226
    0.0301
    0.0377
    0.0452
    0.0528
    0.0603
```

```
>> find(abs(r-(25/18.75)*0.05)<=0.05,1)

ans =

     2

>> t(2)

ans =

    0.0075

>> find(abs(r-(25/18.75)*0.95)<=0.05,1)

ans =

    54

>> t(54)

ans =

    0.3994
```

8. **Entrada senoidal**
9. **Modelo simplificado de orden 1**
10. **Diagrama de Bode**