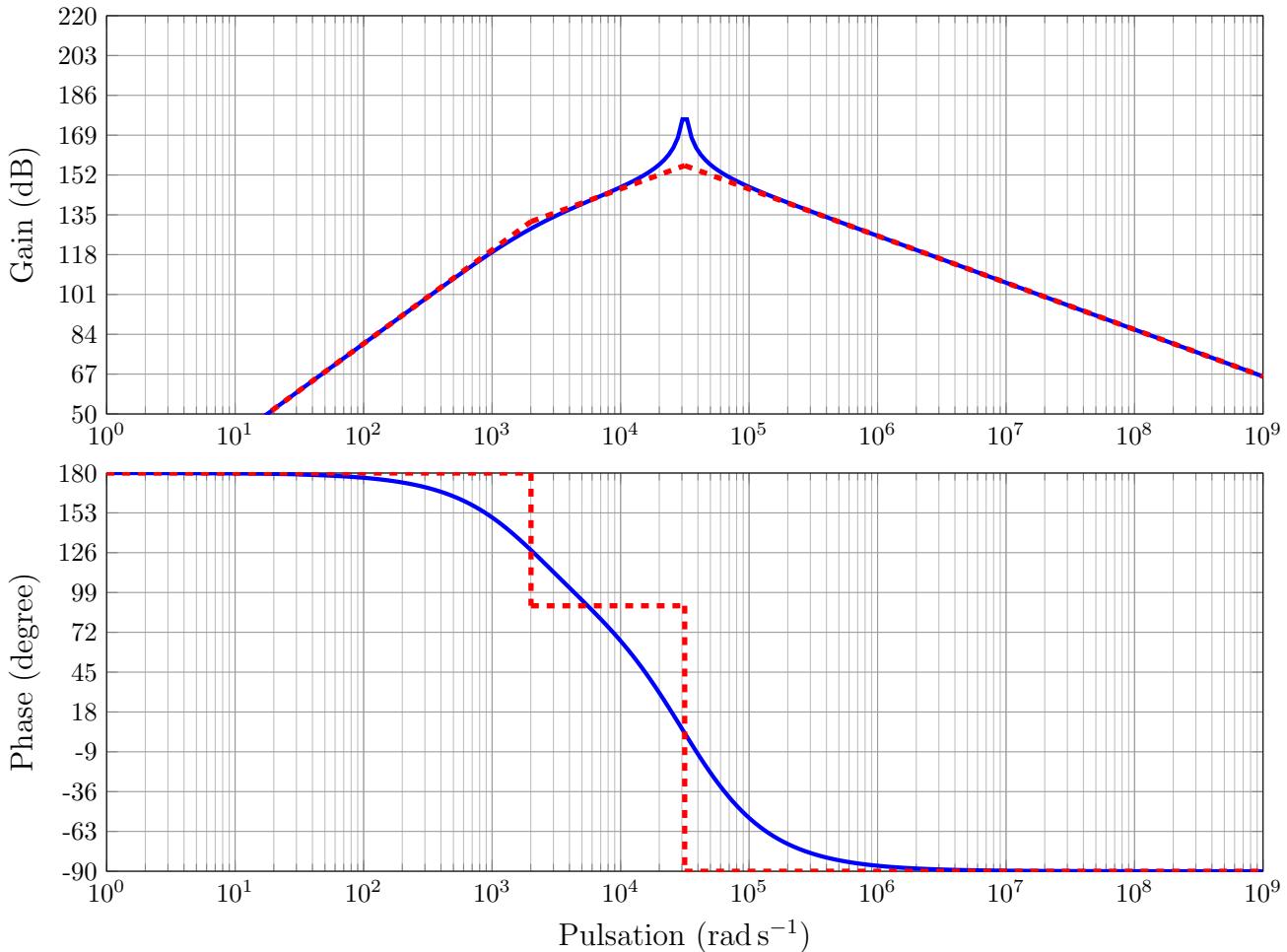


$$H(p) = \frac{p^2}{0.5 \cdot 10^{-12}p^3 + 0.2 \cdot 10^{-8}p^2 + 0.5 \cdot 10^{-3}p + 1}$$



### Fonctions réelles du gain et du déphasage

$$G(\omega) = |H(j\omega)| = \frac{2000000000000 (-\omega^2)}{-\frac{j\omega^3}{2000000000000} - \frac{\omega^2}{500000000} + \frac{j\omega}{2000} + 1}$$

$$G_{dB}(\omega) = 246 + 40 \log \omega - 10 \log \left( 1 + \left( \frac{\omega}{\omega_1} \right)^2 \right) - 20 \log \left( 1 + \left( \frac{\omega}{\omega_2} \right)^2 \right)$$

$$\phi(\omega) = \arg H(j\omega) = 180 - \arctan \left( \frac{\omega}{\omega_1} \right) - 2 \arctan \left( \frac{\omega}{\omega_2} \right)$$

### Quelques valeurs particulières calculées

$\omega$ (rad s⁻¹)	Gain (dB)	Phase (°)
1.00000	-0.00000	179.97135
7.94328	35.99993	179.77244
63.09573	71.99575	178.19303
501.18723	107.73973	165.92835
<b>2008.03200</b>	<b>129.13569</b>	<b>134.76897</b>
3981.07171	137.21005	116.30258
<b>31559.46870</b>	<b>180.01741</b>	<b>3.64065</b>
31622.77660	180.00000	-0.00000
251188.64315	138.15825	-89.08034
1995262.31497	120.02276	-89.88512
15848931.92461	102.02063	-89.98554
125892541.17942	84.02060	-89.99818
1000000000.00000	66.02060	-89.99977