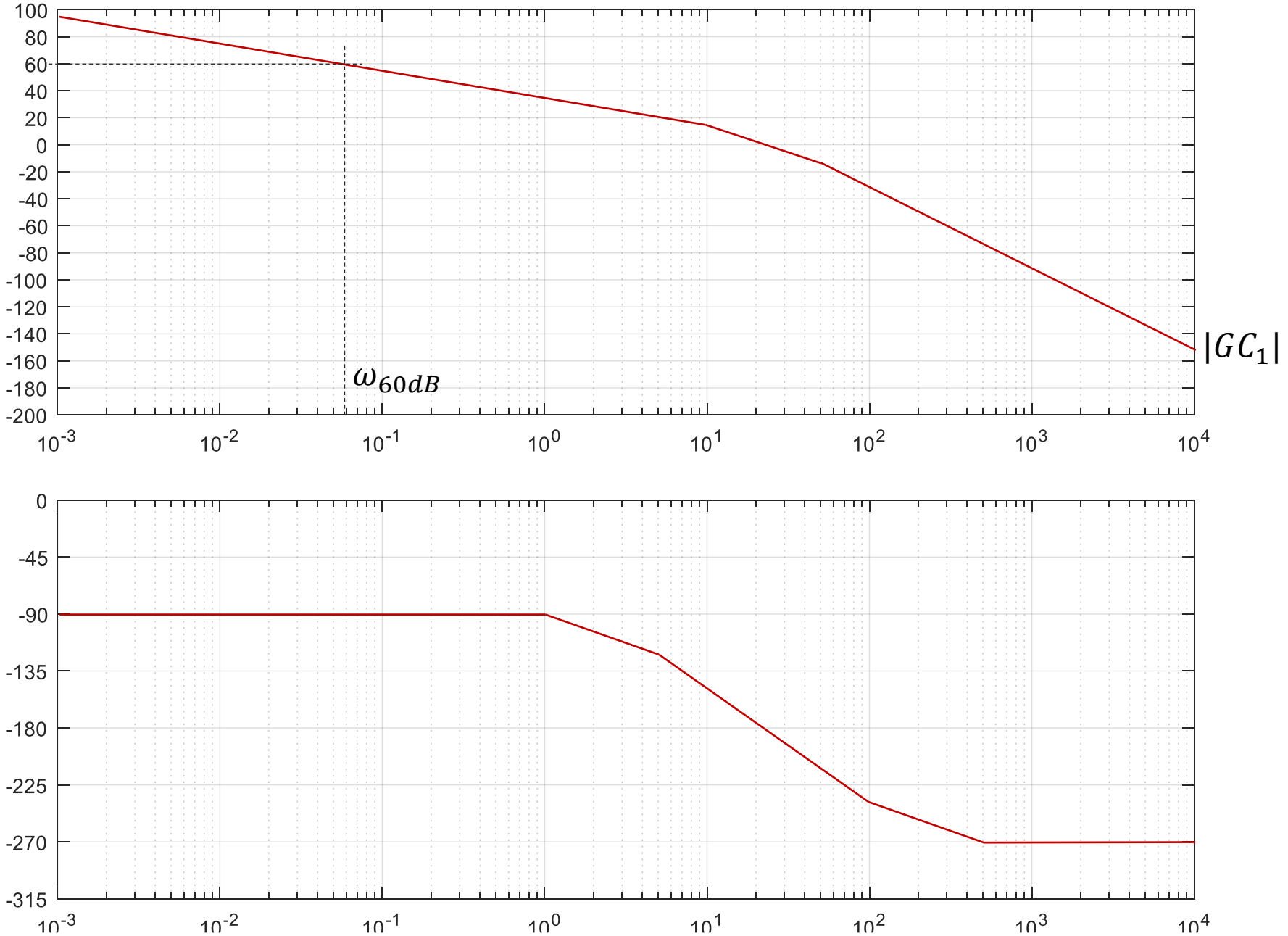
$$GC_1(s) = \frac{50}{s(1 + s/10)(1 + s/50)}$$

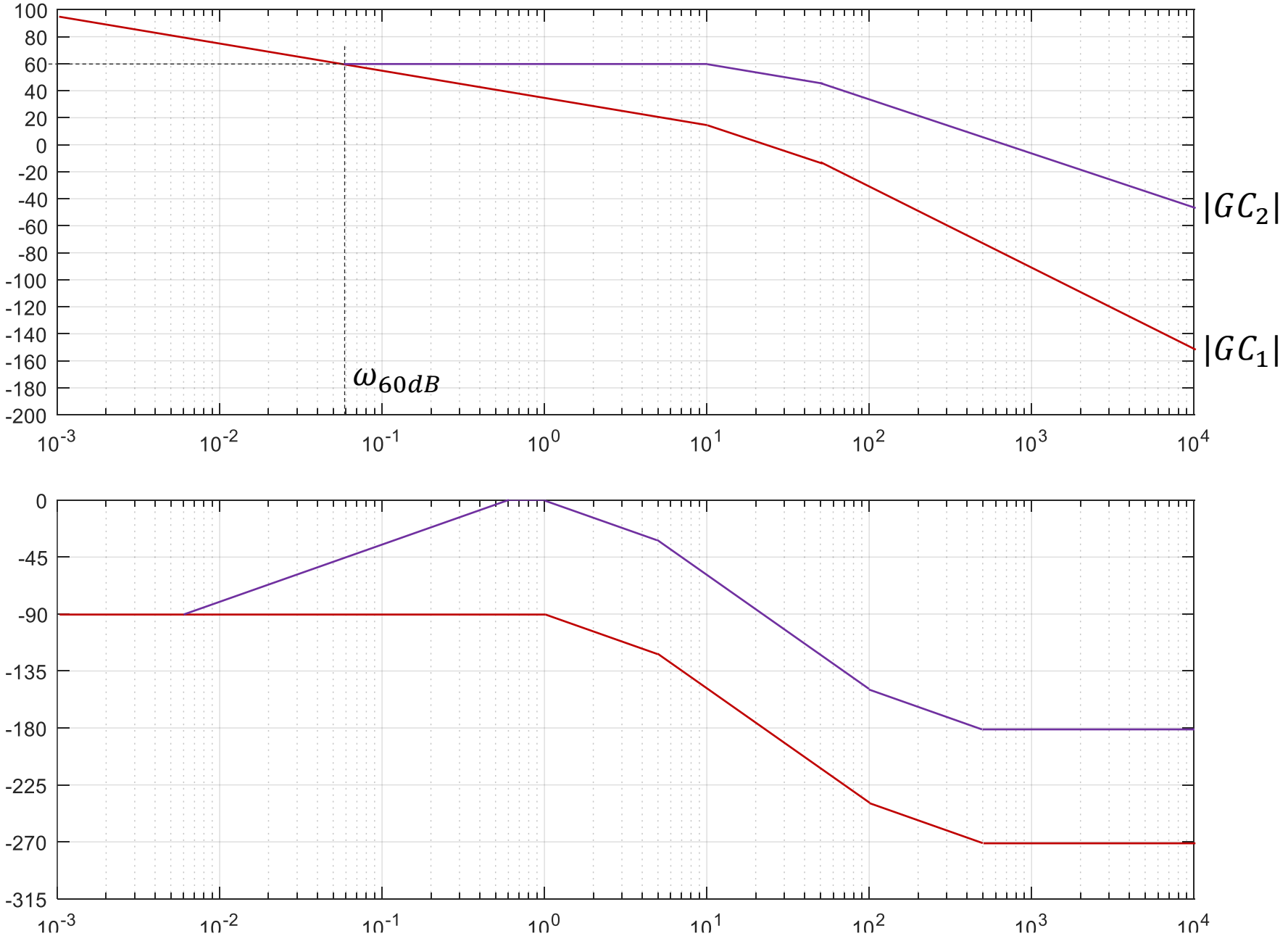
$$\omega_{60dB} \cong 6 \times 10^{-2} rad/seg$$



$$GC_1(s) = \frac{50}{s(1 + s/10)(1 + s/50)}$$

$$\omega_{60dB} \cong 6 \times 10^{-2} rad/seg$$

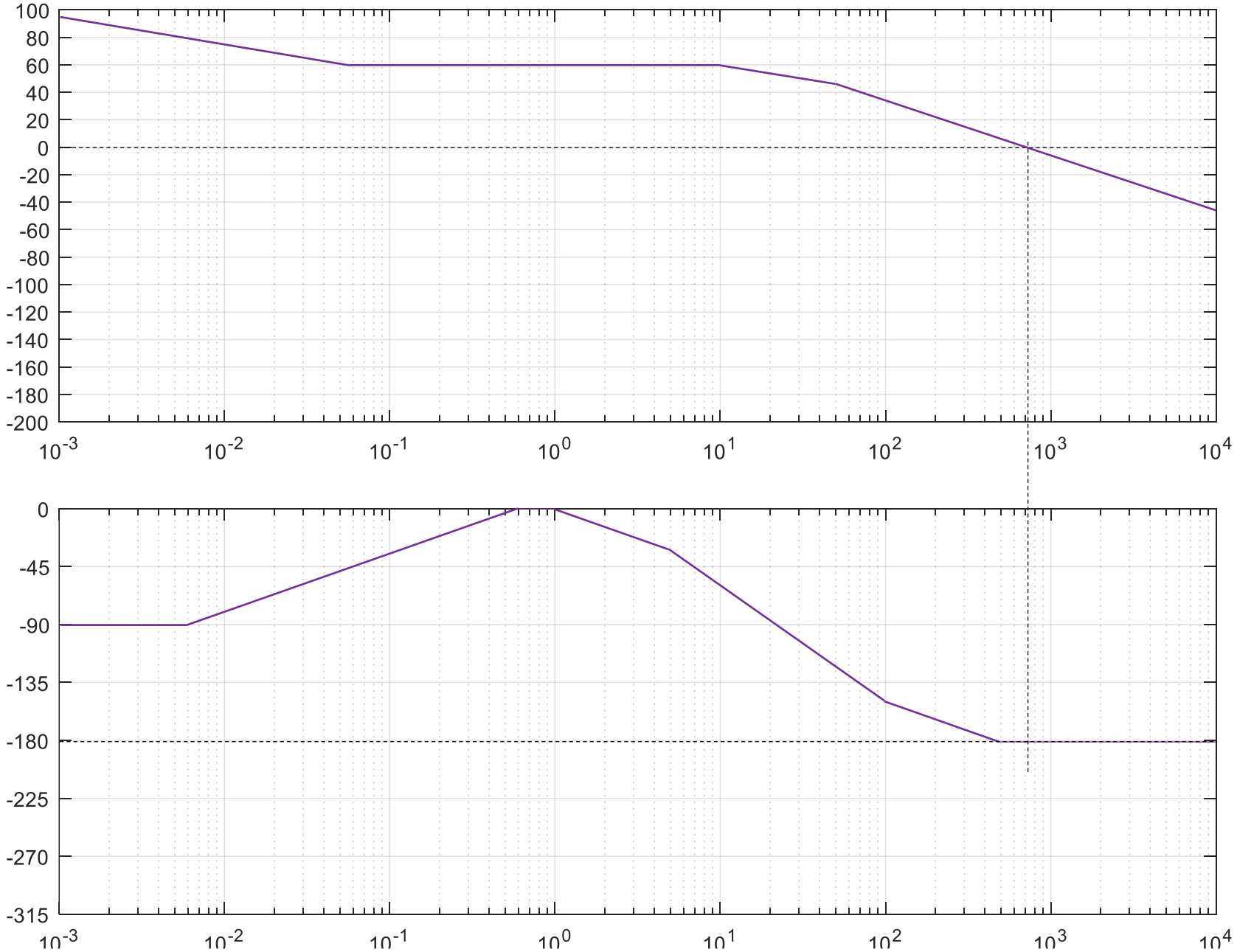
$$C_2(s) = -250\,\frac{1 + s/0{,}06}{s}$$



$$GC_2(s) = \frac{50(1 + s/0{,}06)}{s(1 + s/10)(1 + s/50)}$$

$\omega_{0dB} \cong 700\, rad/seg$

$MF \cong 0°$

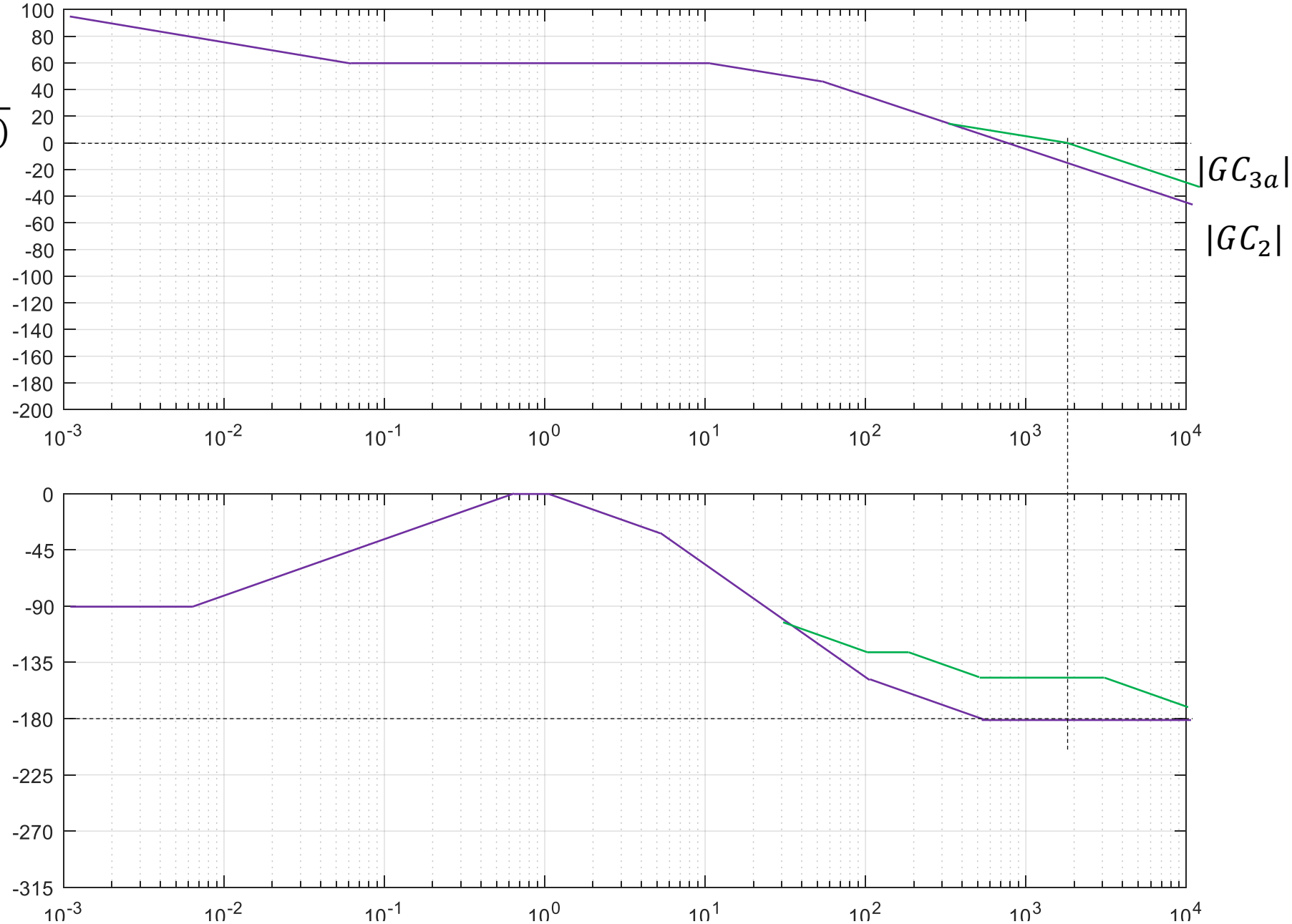


$|GC_2|$

$$GC_2(s) = \frac{50(1 + s/0{,}06)}{s(1 + s/10)(1 + s/50)}$$

$\omega_{0dB} \cong 700\, rad/seg$

$MF \cong 0°$



Enfoque 1: $(K \neq 1)$

$\phi_m = 45°$

$\omega_0 = \omega_{0dB}$

$$C_{3a}(s) = C_2 \frac{1 + s/290}{1 + s/1690}$$

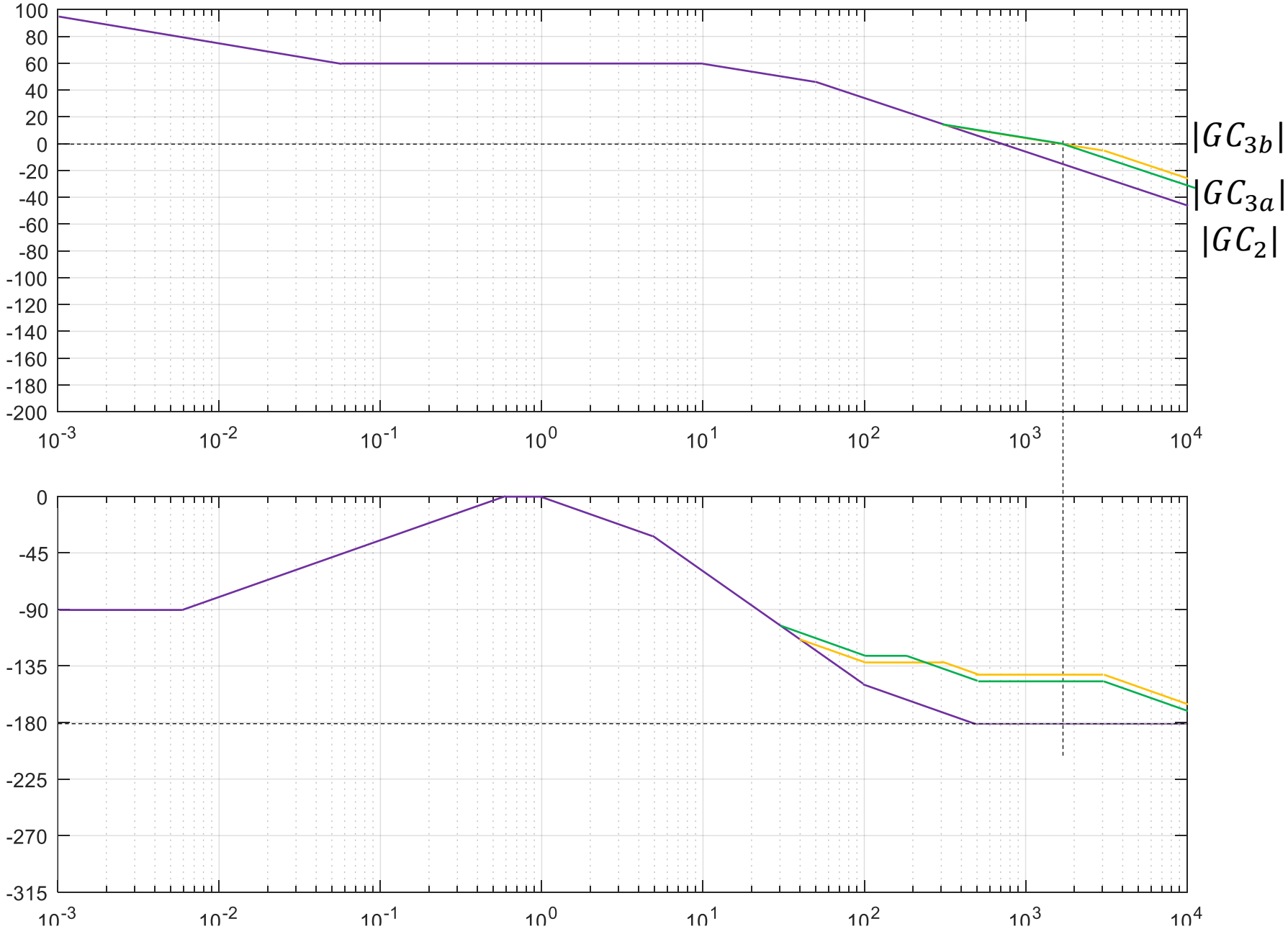
$\omega_{0dB} \cong 1700\, rad/seg$

$MF \cong 32°\ (30°{\sim}35°)$

$$GC_2(s) = \frac{50(1 + s/0{,}06)}{s(1 + s/10)(1 + s/50)}$$

$\omega_{0dB} \cong 700\, rad/seg$

$MF \cong 0°$



$\phi_m = 50°$

$\omega_0 = 1000\, rad/seg$

$$C_{3b}(s) = C_2 \frac{1 + s/364}{1 + s/2747}$$

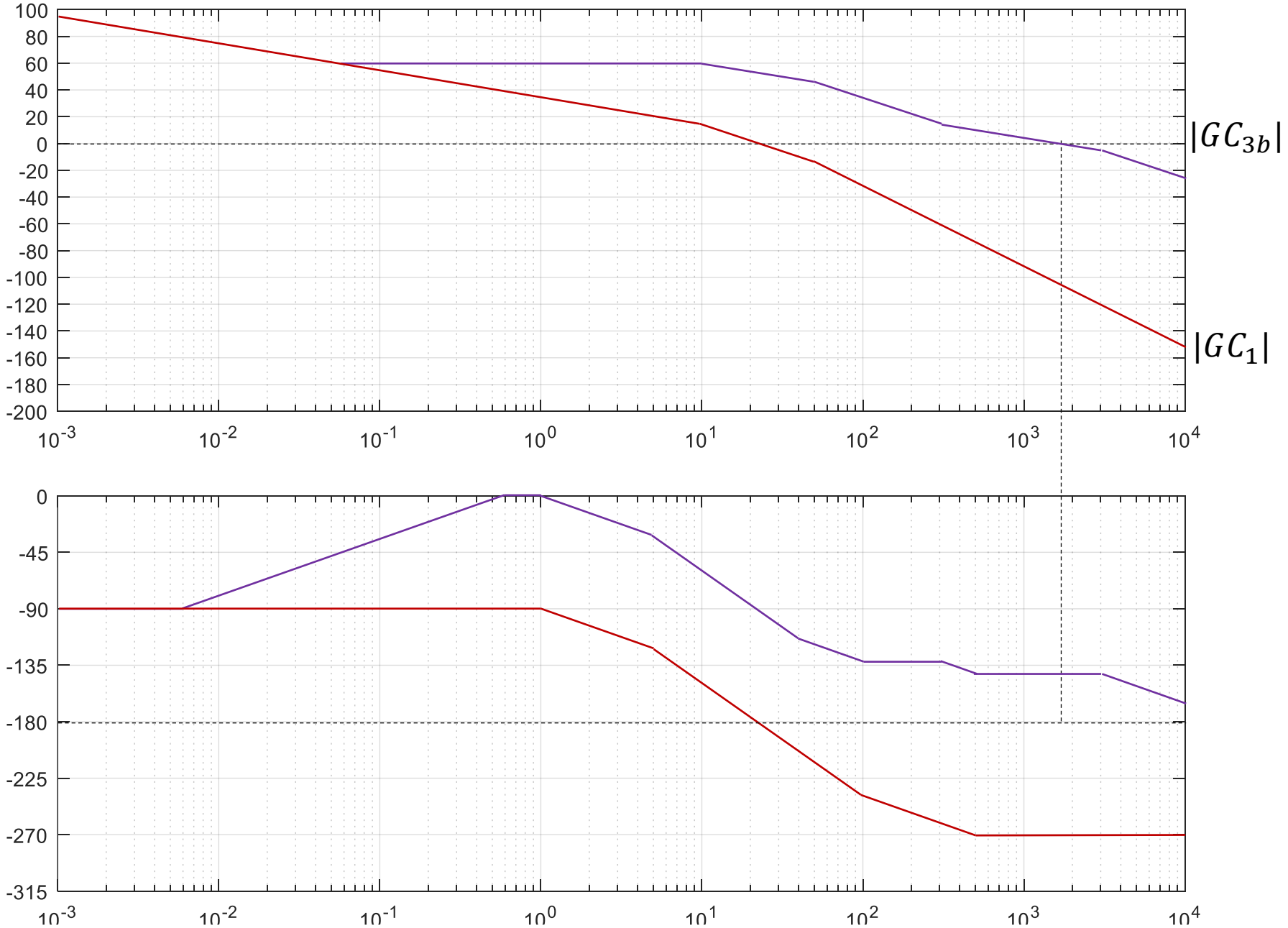
$\omega_{0dB} \cong 1700\, rad/seg$

$MF \cong 40°$

$$GC_1(s) = \frac{50}{s(1+s/10)(1+s/50)}$$

$$GC_{3b}(s) = \frac{50(1+s/0{,}06)(1+s/364)}{s(1+s/10)(1+s/50)(1+s/2747)}$$

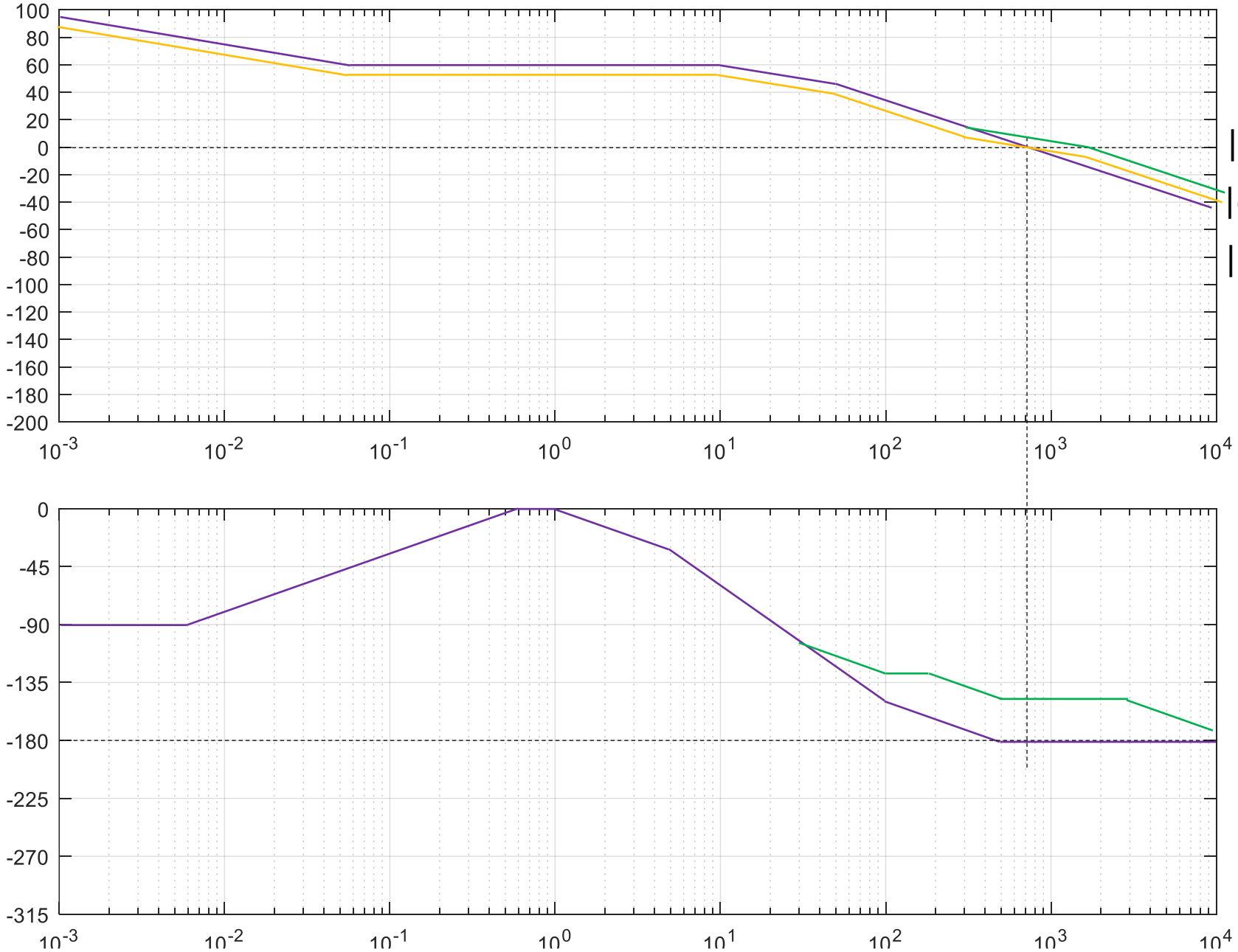
$$C_{3b}(s) = -250\,\frac{(1+s/0{,}06)(1+s/364)}{s(1+s/2747)}$$



$$GC_2(s) = \frac{50(1 + s/0{,}06)}{s(1 + s/10)(1 + s/50)}$$

$\omega_{0dB} \cong 700\, rad/seg$

$MF \cong 0°$



Enfoque 2: $(K \neq 1)$

$\phi_m = 45°$

$\omega_0 = \omega_{0dB}$

$$C_{3c}(s) = C_2 0.41 \frac{1 + s/290}{1 + s/1690}$$

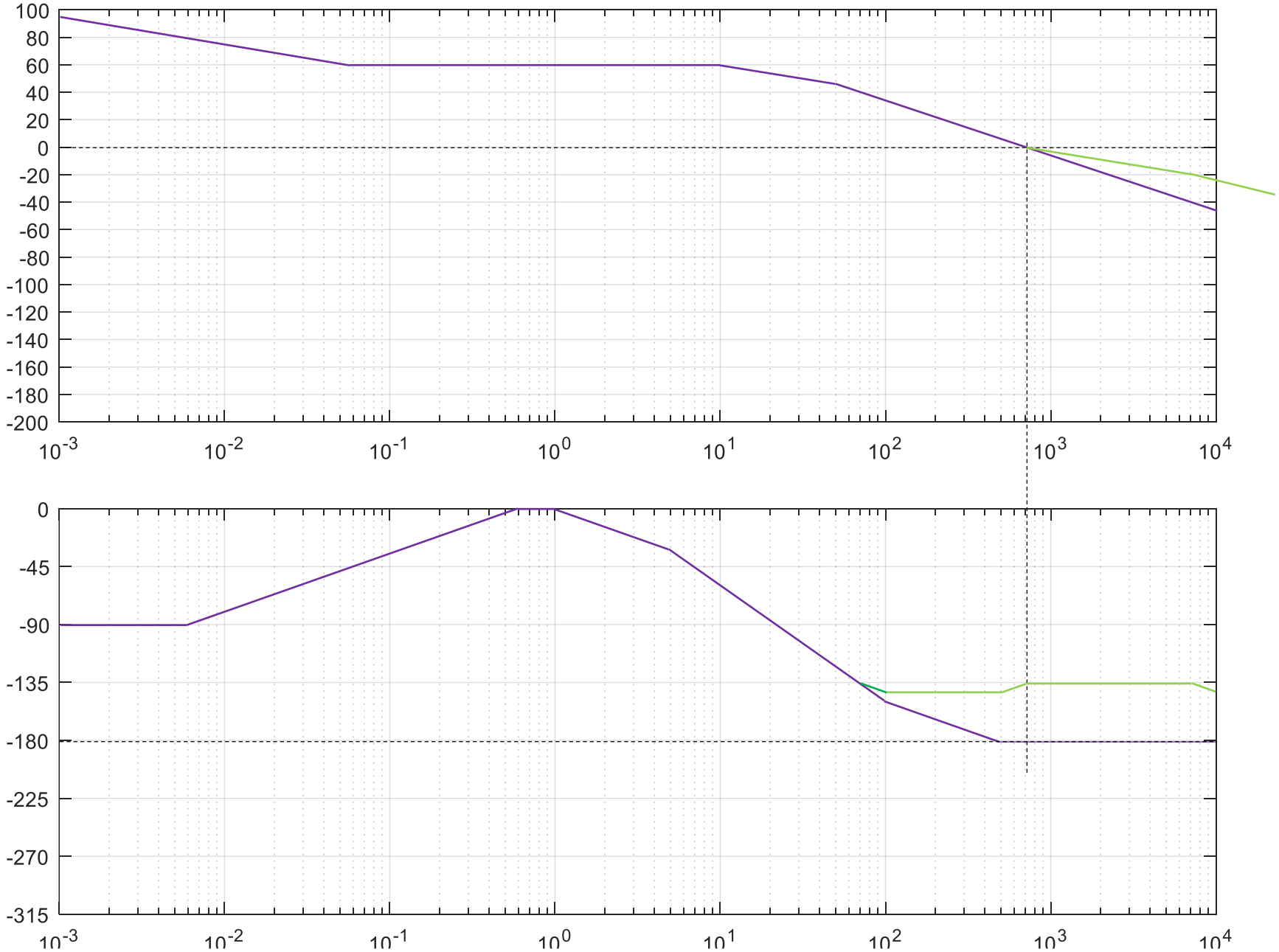
$\omega_{0dB} \cong 700\, rad/seg$

$MF \cong 45°$

$$GC_2(s) = \frac{50(1 + s/0{,}06)}{s(1 + s/10)(1 + s/50)}$$

$\omega_{0dB} \cong 700\, rad/seg$

$MF \cong 0°$



Enfoque 3:

$\phi_m = 45°$

$a = \omega_{0dB}$

$$C_{3d}(s) = C_2 \frac{1 + s/700}{1 + s/7000}$$

$\omega_{0dB} \cong 700\, rad/seg$

$MF \cong 45°$