

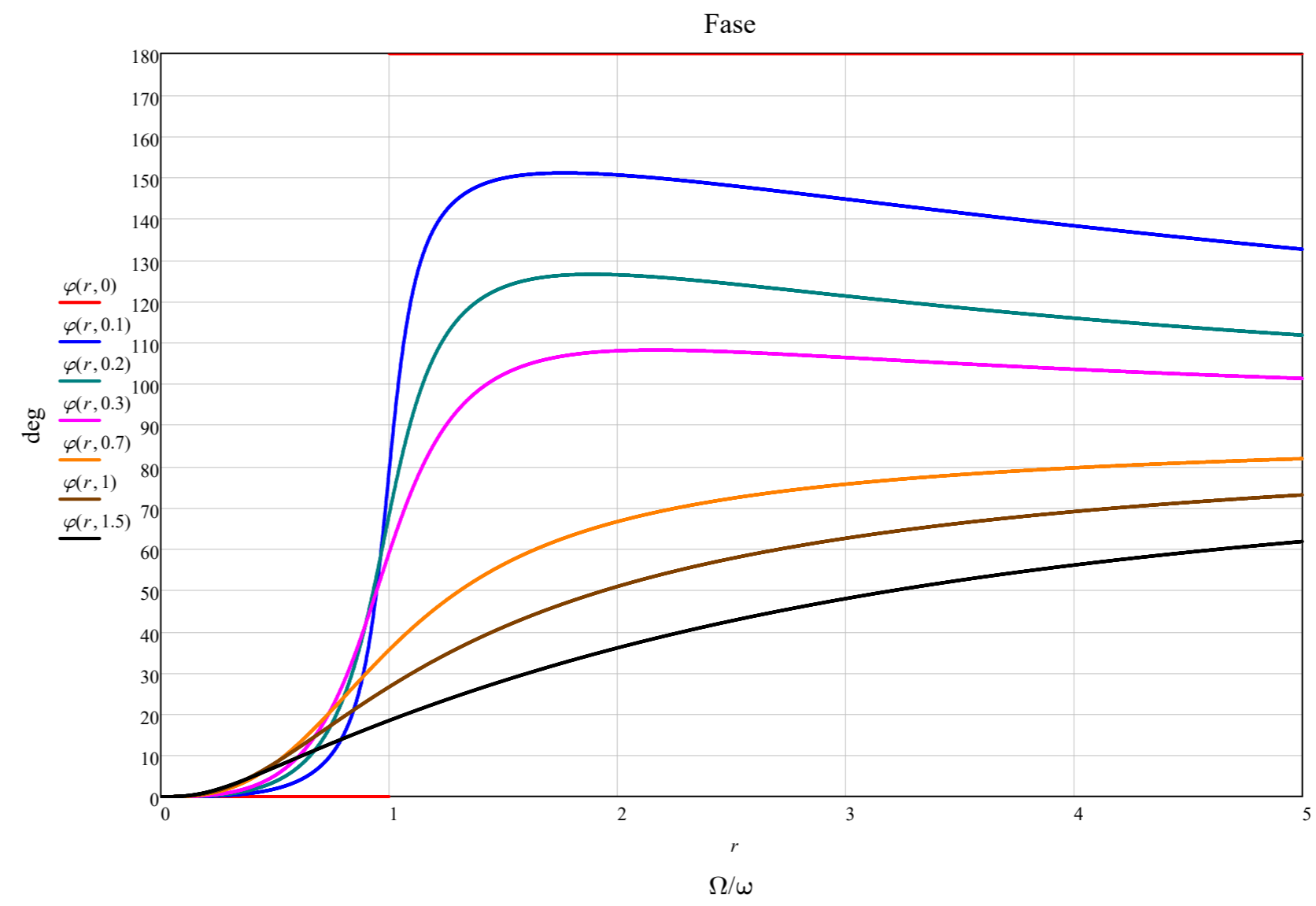
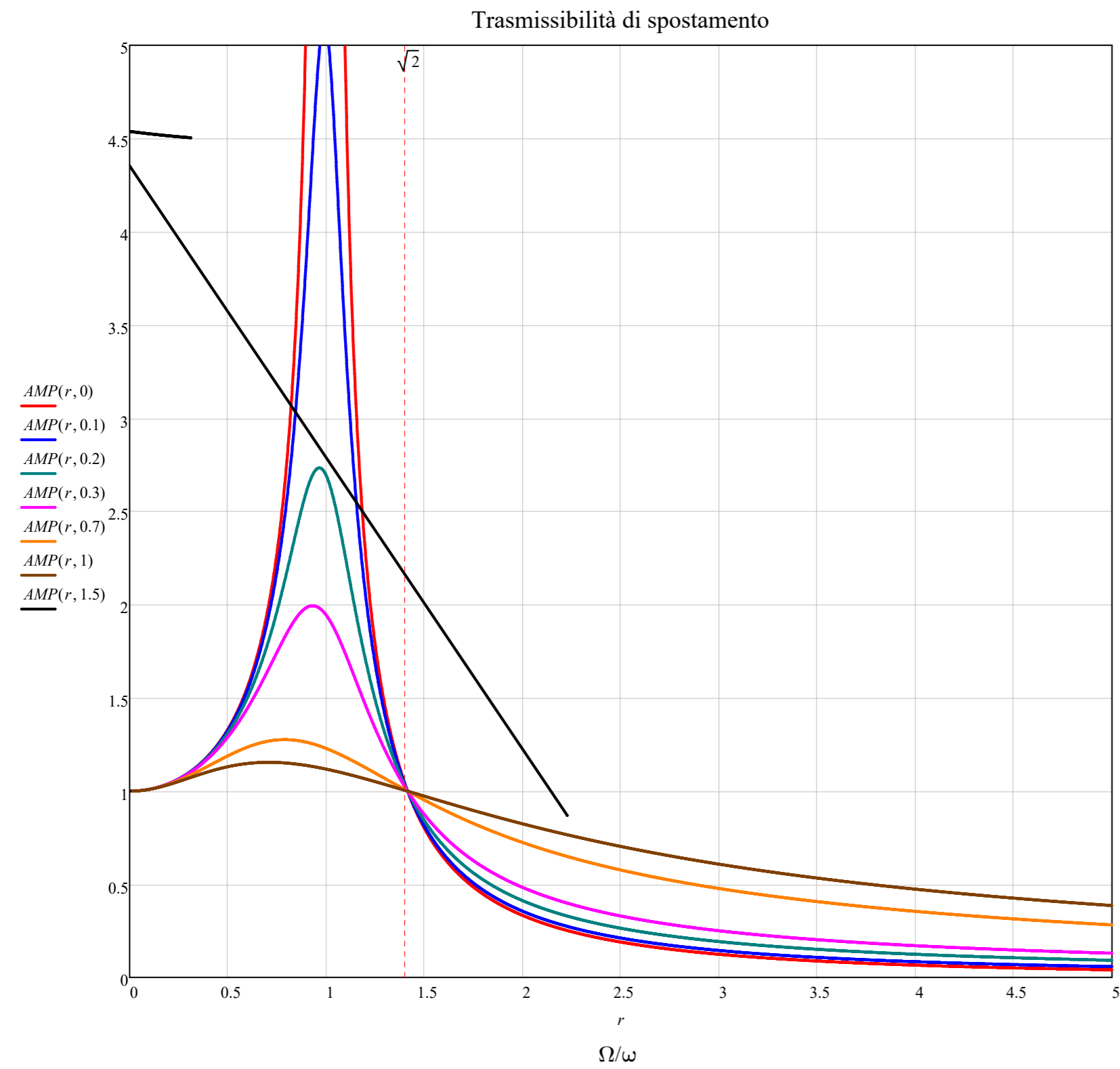
$$AMP(r, \xi) := \frac{1 + (2 \cdot \xi \cdot r)^2}{\sqrt{(1 - r^2)^2 + (2 \cdot \xi \cdot r)^2}}$$

Trasmissibilità di spostamento

$$\varphi(r, \xi) := \frac{\text{angle}[(1 - r^2) + (2 \cdot \xi \cdot r)^2, 2 \cdot \xi \cdot r^3]}{\text{deg}}$$

Fase

$r := 0, 0.001..5$



Dati del sistema vibrante

$m := 20$ Massa

$k := 3000$ Rigidezza

$c := 150$ Cost. di smorzamento

$Y := 15 \cdot 10^{-3} = 0.015$ Lunghezza della manovella

$\omega := \sqrt{\frac{k}{m}} = 12.247$

$\xi := \frac{c}{2 \cdot m \cdot \omega} = 0.306$

Dati della forzante

$n := 90$ Velocità angolare della manovella in RPM (giri/min)

$$\Omega := \frac{2 \cdot \pi \cdot n}{60} = 9.425$$

$$T_f := \frac{2 \cdot \pi}{\Omega} = 0.667$$

$$r := \frac{\Omega}{\omega} = 0.77$$

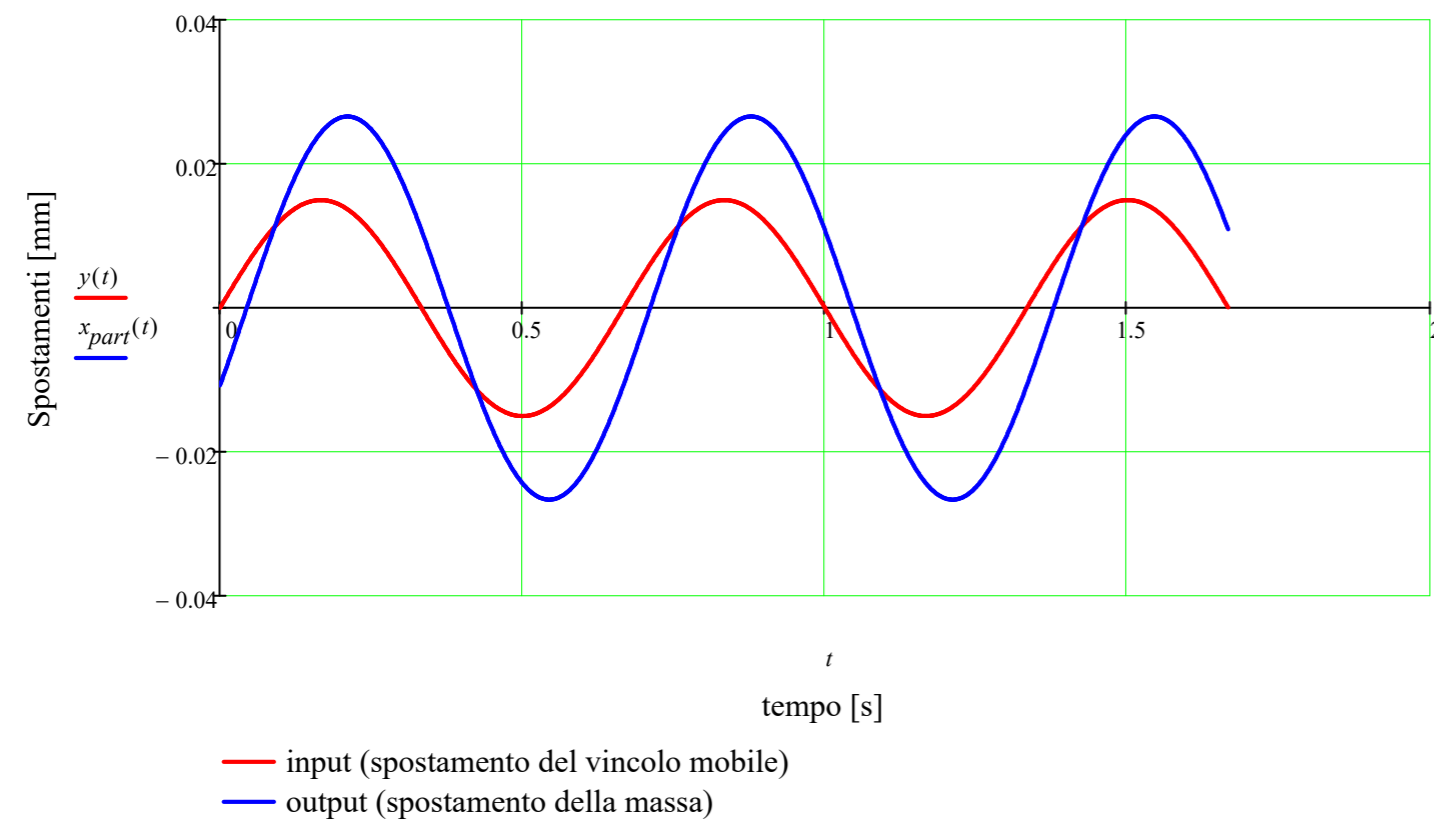
$$X := Y \cdot \frac{1 + (2 \cdot \xi \cdot r)^2}{\sqrt{(1 - r^2)^2 + (2 \cdot \xi \cdot r)^2}} = 0.027$$

$$\varphi := \text{angle}\left[\frac{1 + (2 \cdot \xi \cdot r)^2}{(1 - r^2)^2 + (2 \cdot \xi \cdot r)^2}\right] = 0.417 \text{ rad} \quad \varphi = 23.895 \text{ deg}$$

$$y(t) := Y \cdot \sin(\Omega \cdot t) \quad y(t) = 0.015 \cdot \sin(9.42477796076938 \cdot t)$$

$$x_{part}(t) := X \cdot \sin(\Omega \cdot t - \varphi) \quad x_{part}(t) = 0.026607658450051967 \cdot \sin(9.42477796076938 \cdot t - 0.41703779358204085)$$

$$t := 0, 0.001 .. 2.5 \cdot T_f$$



$r = 0.77$

$$AMP(r, \xi) := \frac{1 + (2 \cdot \xi \cdot r)^2}{\sqrt{(1 - r^2)^2 + (2 \cdot \xi \cdot r)^2}}$$

$$FASE(r, \xi) := \frac{\text{angle}\left[\frac{1 + (2 \cdot \xi \cdot r)^2}{(1 - r^2)^2 + (2 \cdot \xi \cdot r)^2}\right]}{\text{deg}}$$

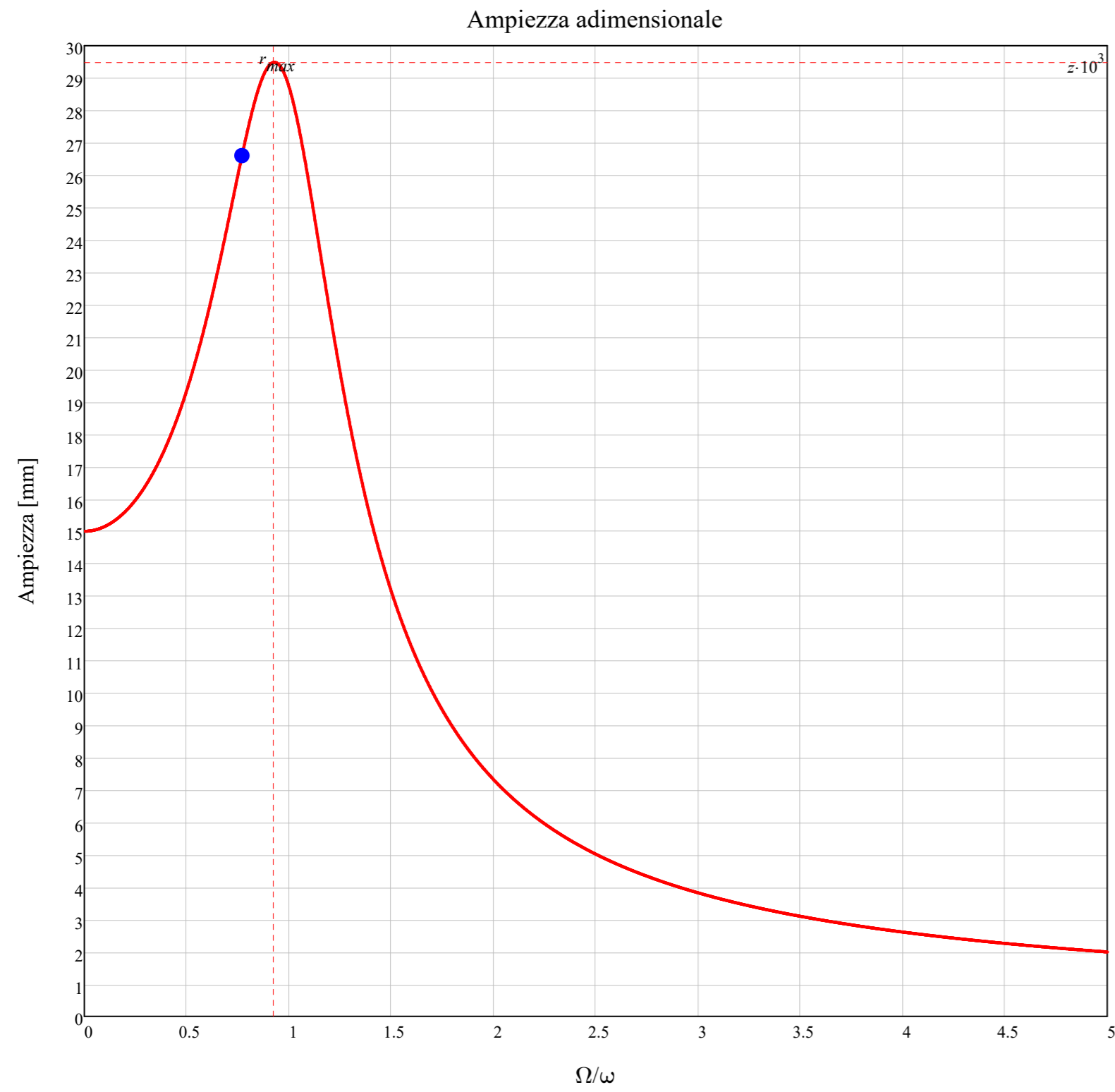
ascissa del massimo

$$r_{max} := \frac{1}{2 \cdot \xi} \cdot \sqrt{1 + 8 \cdot \xi^2} - 1 = 0.928$$

ordinata del massimo

$$z := \left[\frac{2 \cdot \sqrt{2} \cdot \xi^2 \cdot \sqrt{1 + 8 \cdot \xi^2}}{\sqrt{1 + 8 \cdot \xi^2} + (8 \cdot \xi^4 - 4 \cdot \xi^2 - 1) \cdot \sqrt{1 + 8 \cdot \xi^2}} \right] \cdot Y = 0.029$$

$$r_x := 0, 0.001..5$$



$$r = 0.77$$

$$X \cdot 1000 = 26.608$$

$$\xi = 0.306$$

$$\varphi = 23.895 \cdot \text{deg}$$

