

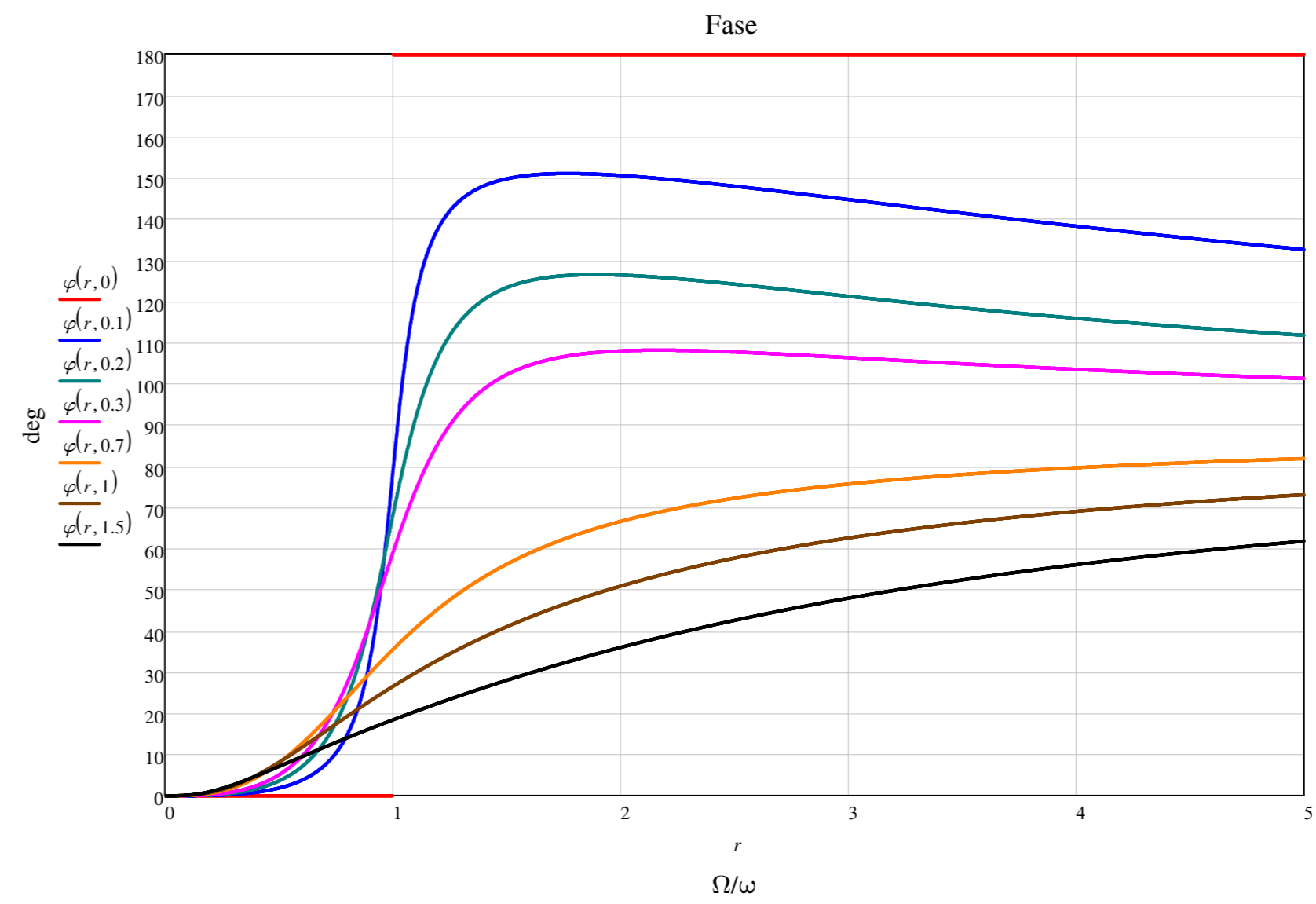
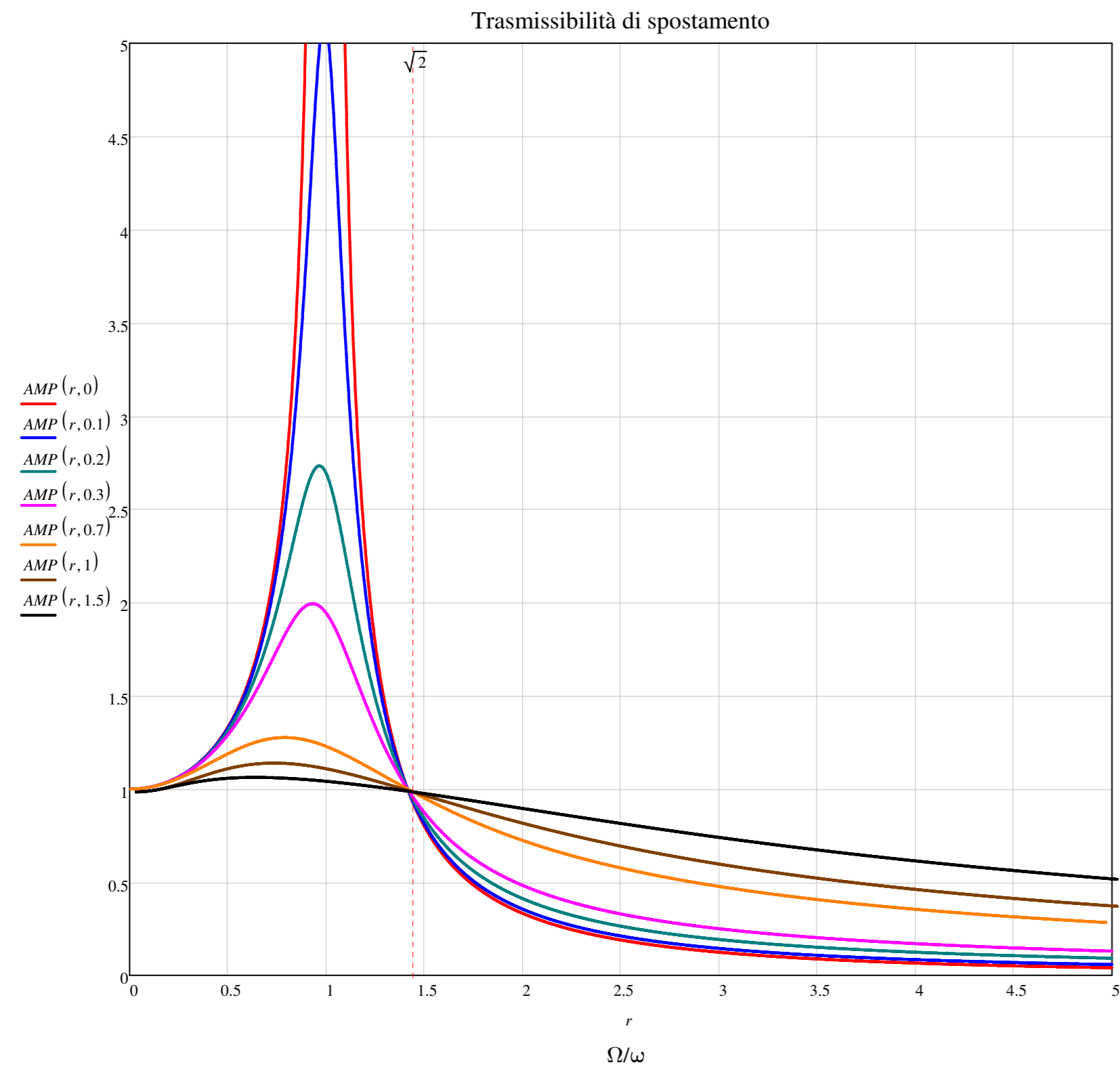
$$AMP(r, \xi) := \frac{1 + (2 \cdot \xi \cdot r)^2}{\sqrt{(1 - r^2)^2 + (2 \cdot \xi \cdot r)^2}}$$

Trasmissibilità di spostamento

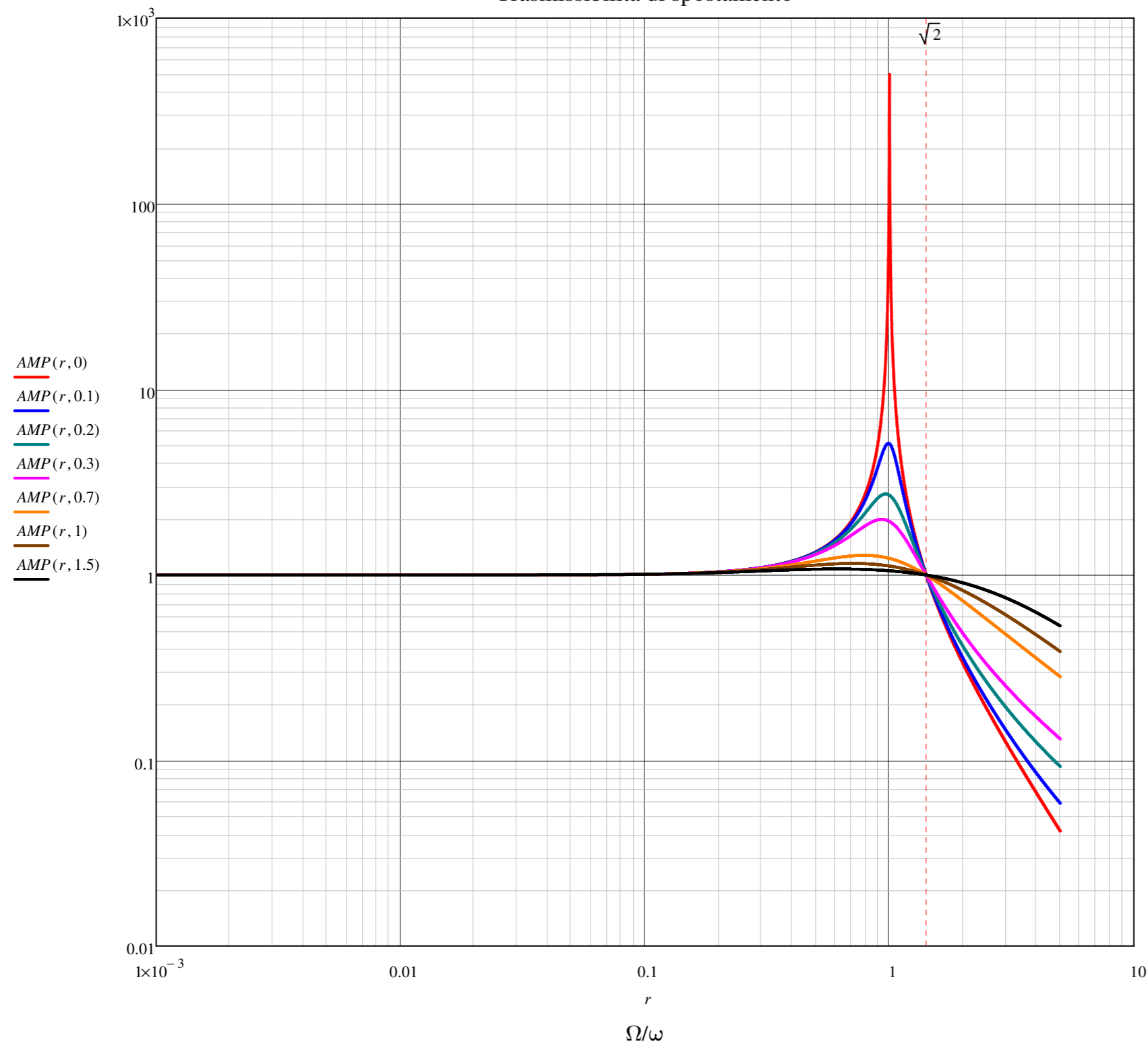
$$\varphi(r, \xi) := \frac{\text{angle}[(1 - r^2) + (2 \cdot \xi \cdot r)^2, 2 \cdot \xi \cdot r^3]}{\text{deg}}$$

Fase

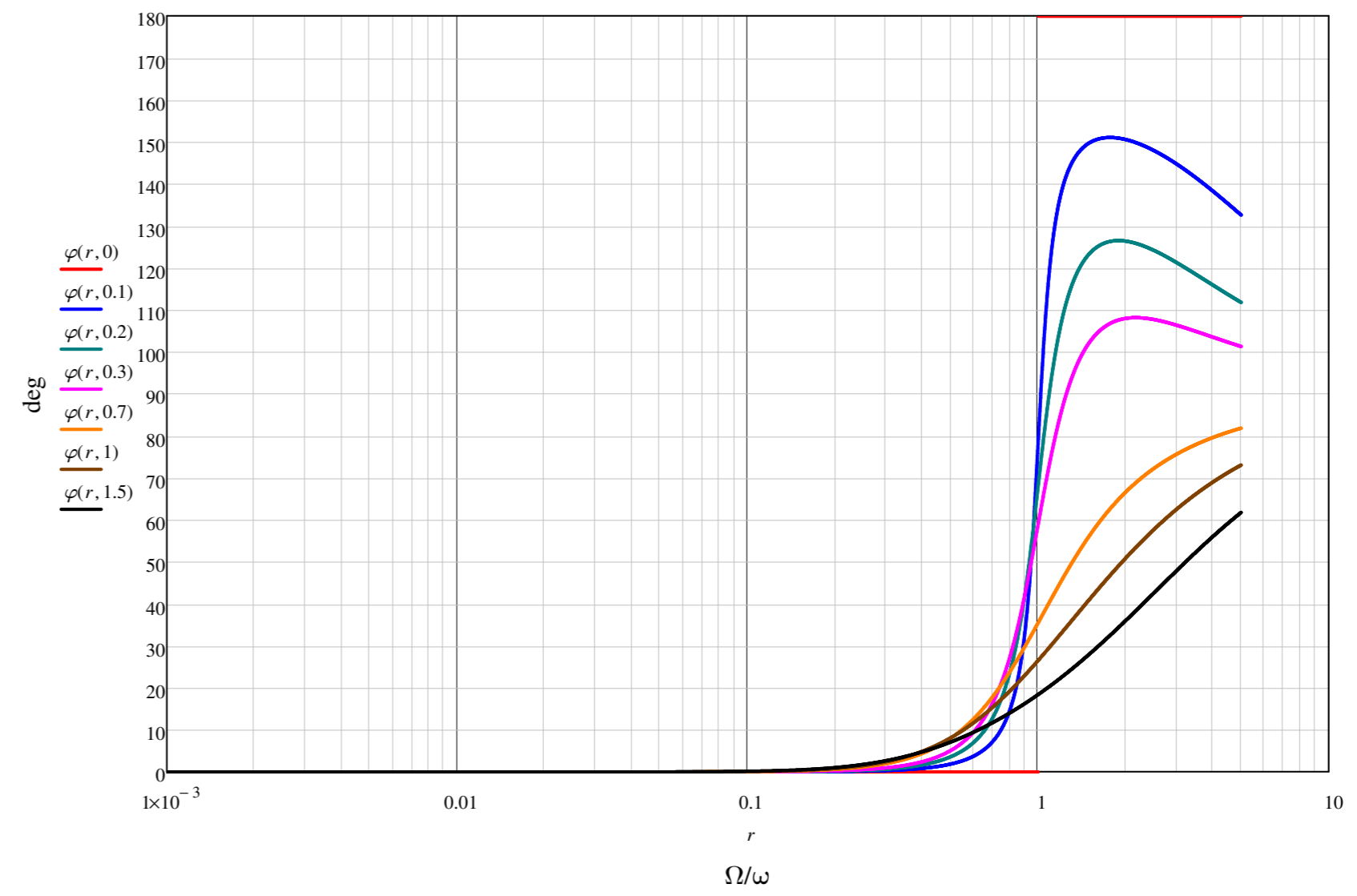
$r := 0, 0.001..5$



Trasmissibilità di spostamento



Fase



Dati del sistema vibrante

- $m_w := 20$  Massa
- $k := 3000$  Rigidezza
- $c_w := 150$  Cost. di smorzamento
- $Y := 15 \cdot 10^{-3} = 0.015$  Lunghezza della manovella

$$\omega := \sqrt{\frac{k}{m}} = 12.247 \quad \xi := \frac{c}{2 \cdot m \cdot \omega} = 0.306$$

Dati della forzante

$$n := 90 \quad \text{Velocità angolare della manovella in RPM (giri/min)}$$

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

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

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

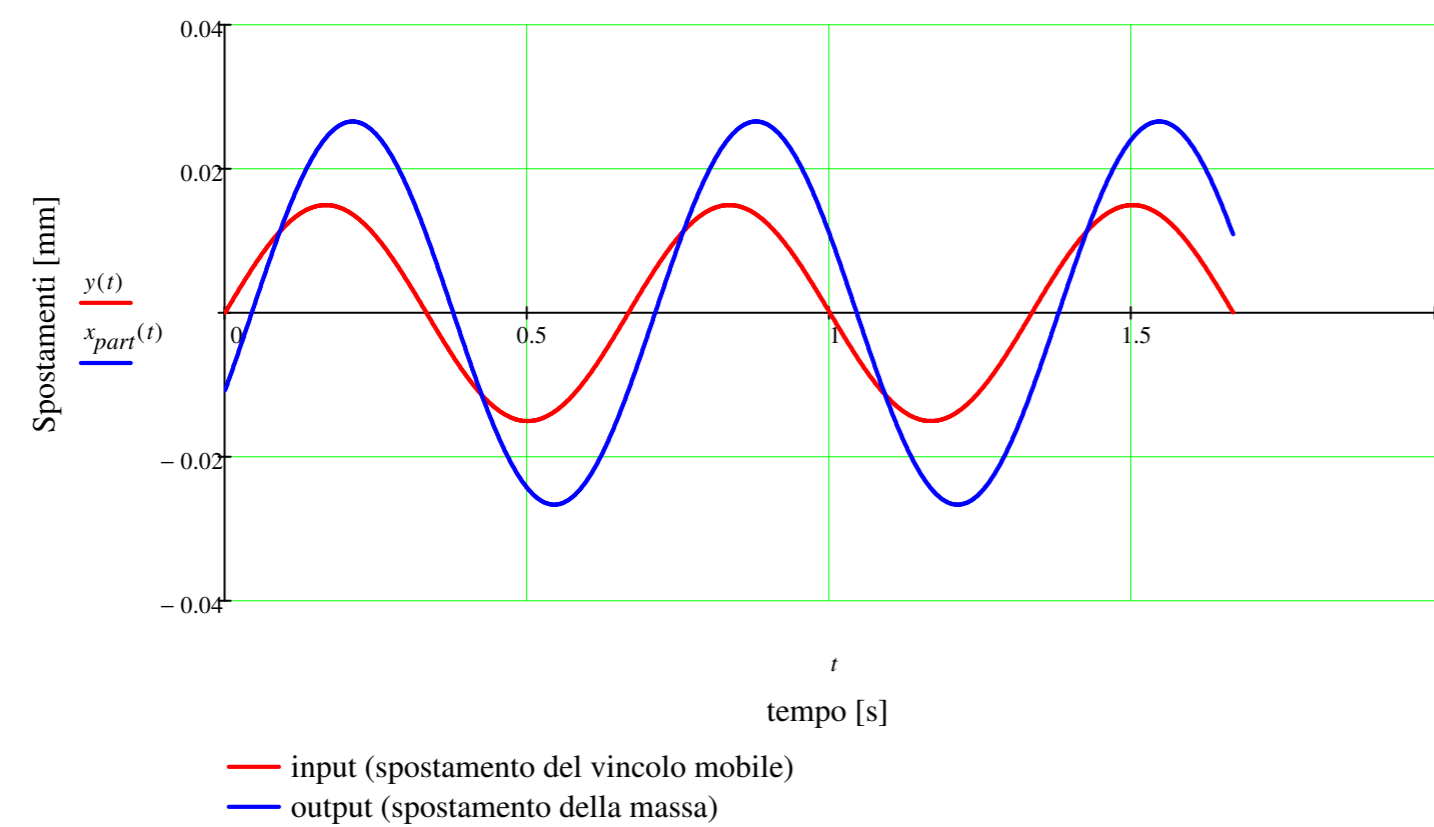
$$X := Y \cdot \frac{1 + (2 \cdot \xi \cdot r)^2}{\sqrt{(1 - r^2)^2 + (2 \cdot \xi \cdot r)^2}} = 0.027$$

$$\varphi := \text{angle}[(1 - r^2) + (2 \cdot \xi \cdot r)^2, 2 \cdot \xi \cdot r^3] = 0.417 \text{ rad} \quad \varphi = 23.895 \text{ deg}$$

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

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

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



$$r = 0.77$$

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

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

ascissa del massimo

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

ordinata del massimo

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

$$r_x := 0.0001..5$$

