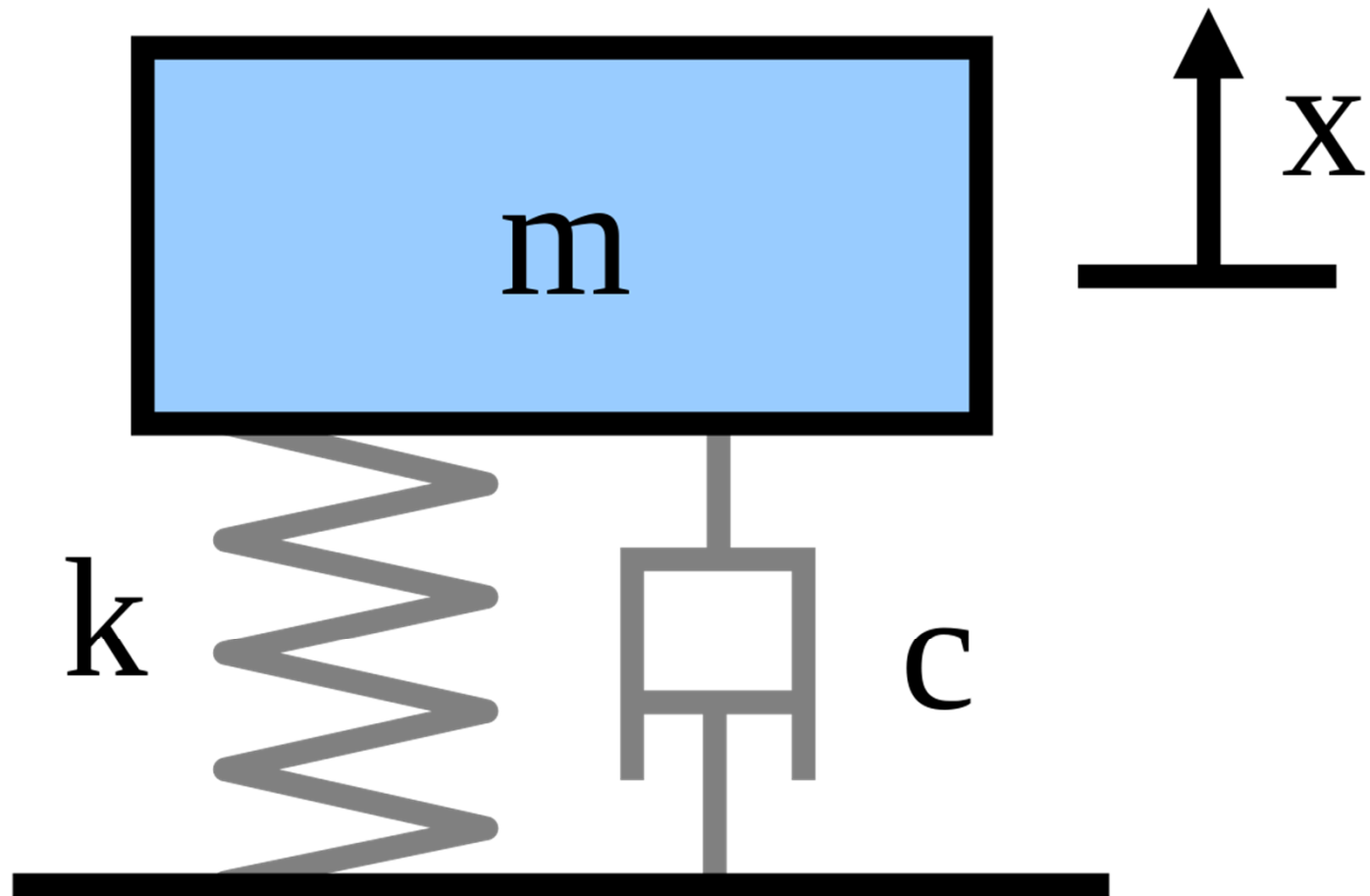


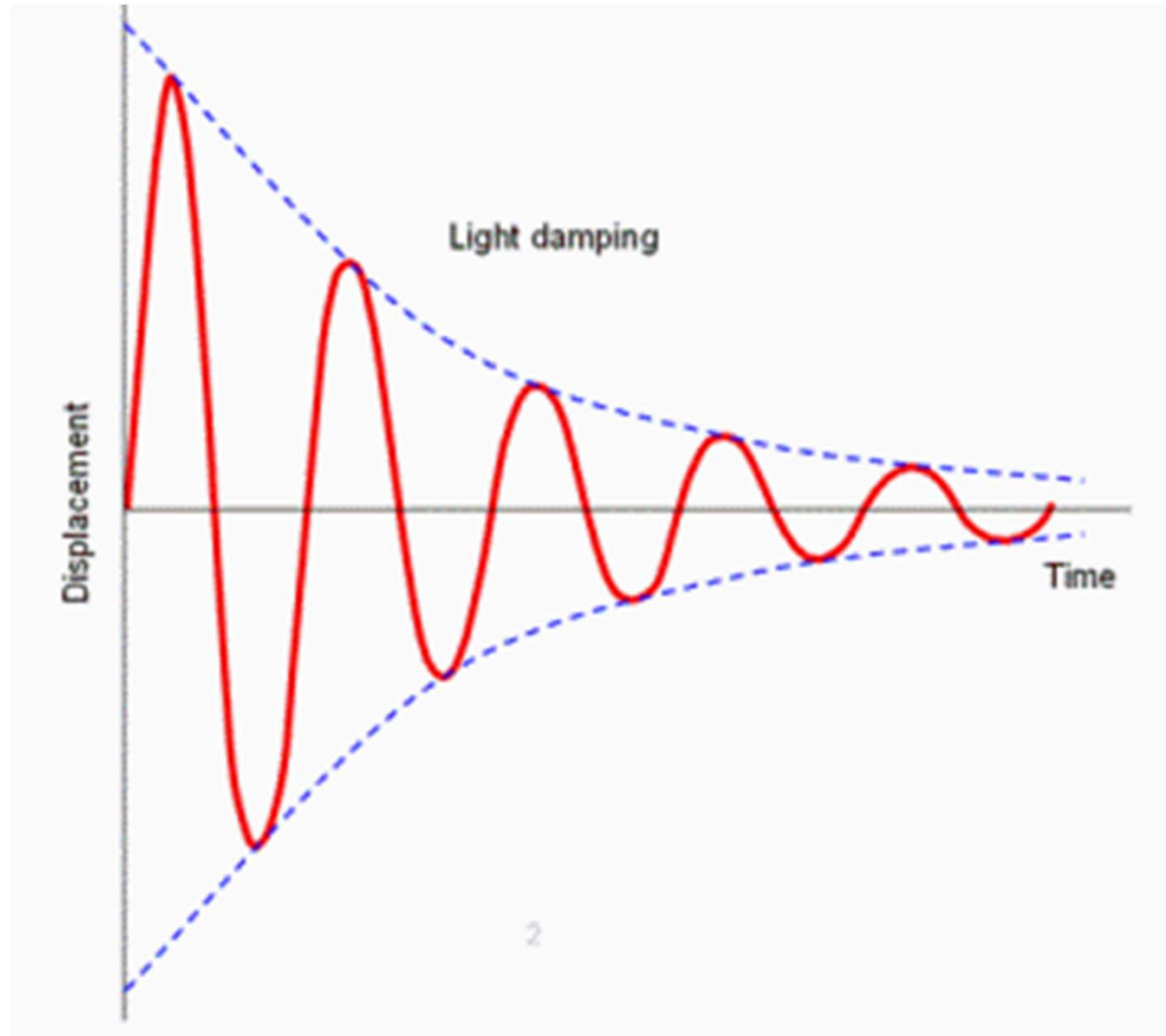
Taşıt Titreşimleri

Yrd. Doç. Dr. Levent YÜKSEK

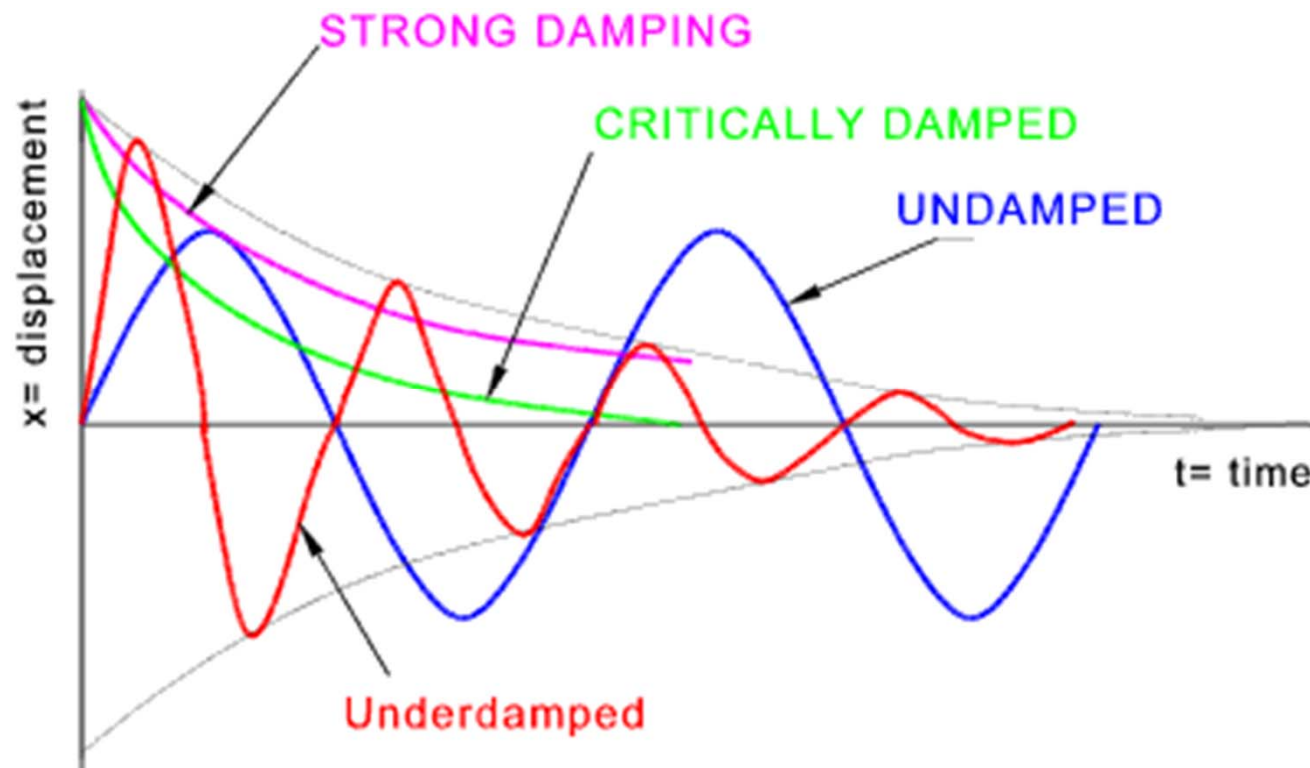
Amortisörler



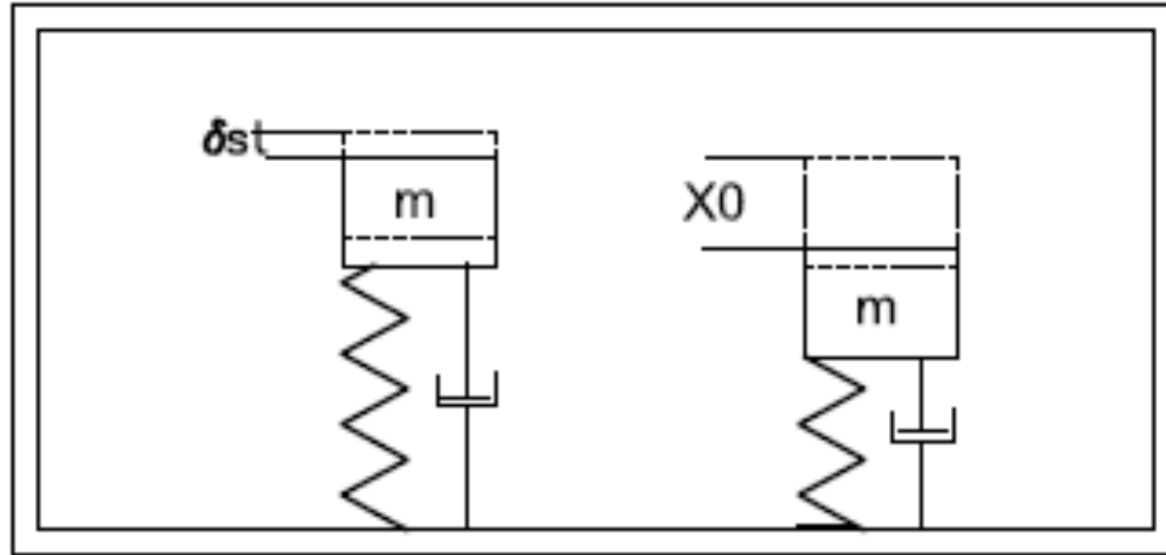
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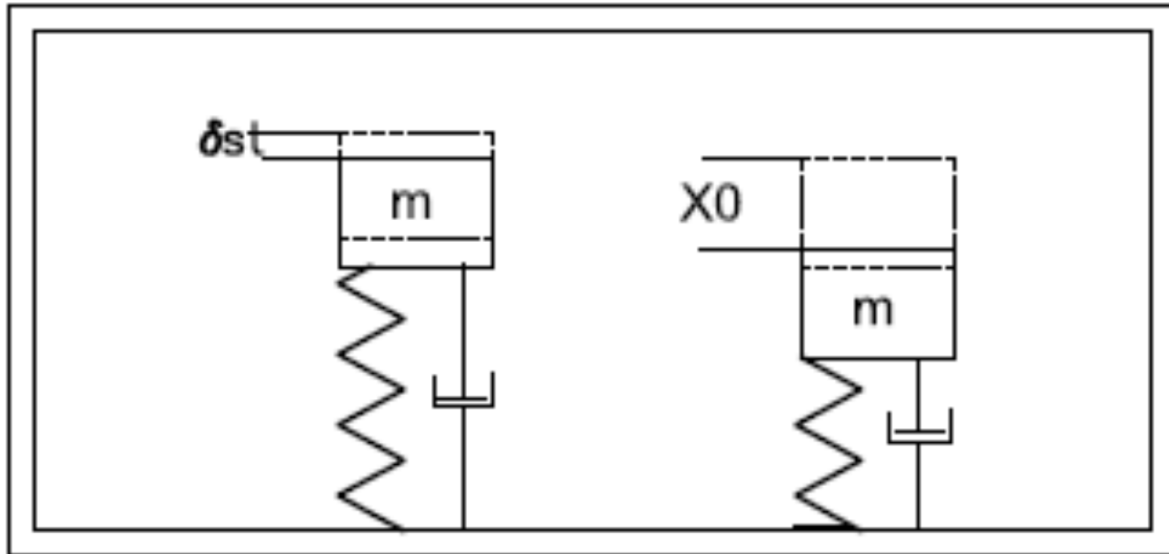
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Amortisörler



Amortisörler

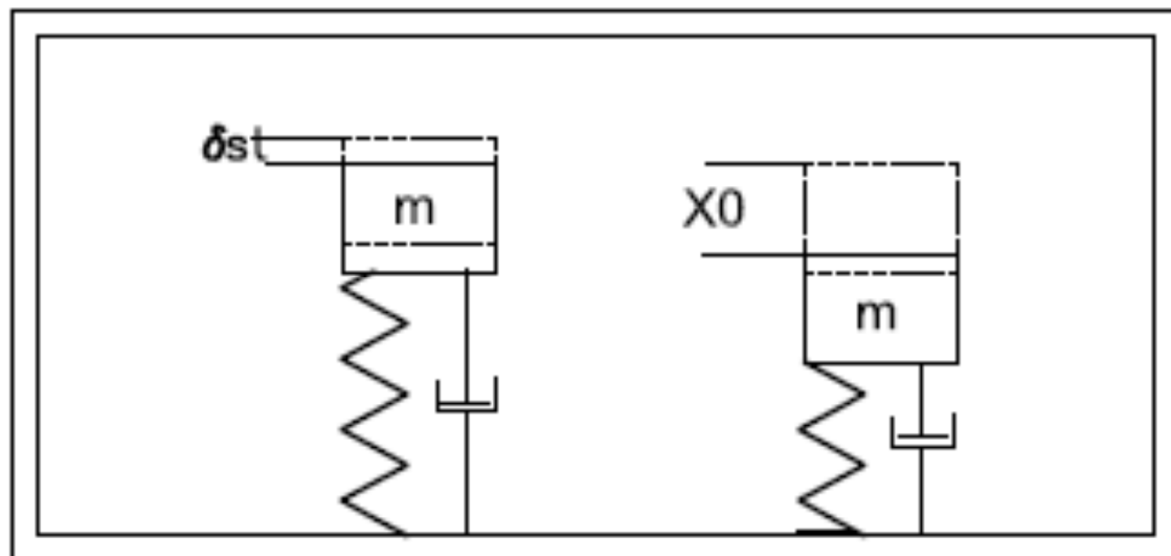


$$\frac{k}{m} = W_n^2$$

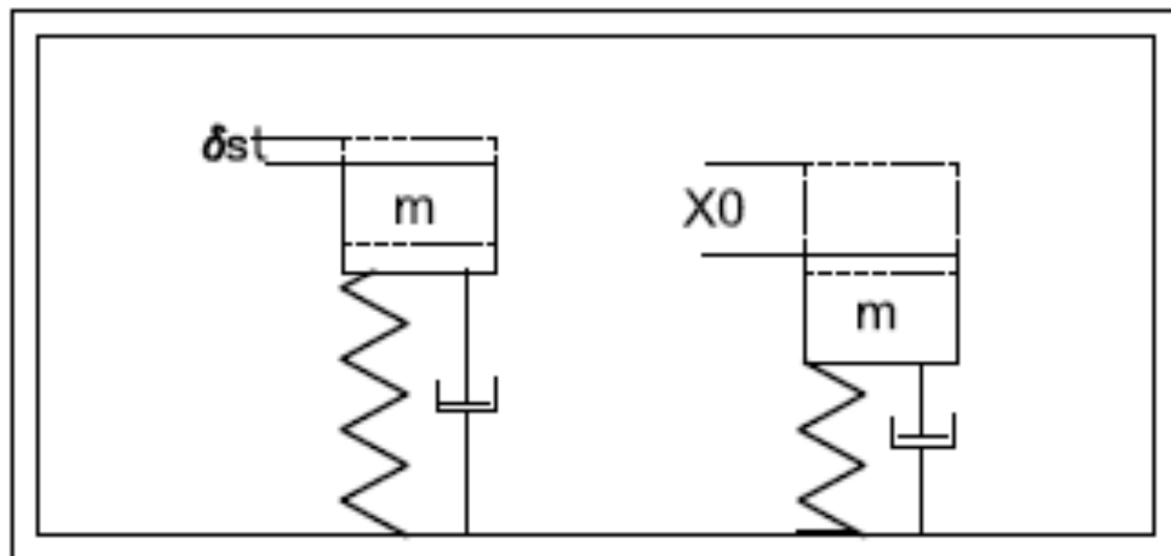
$$\frac{c}{m} = K$$

$$m \frac{d^2 x}{dt^2} = -kx - c \frac{dx}{dt}$$

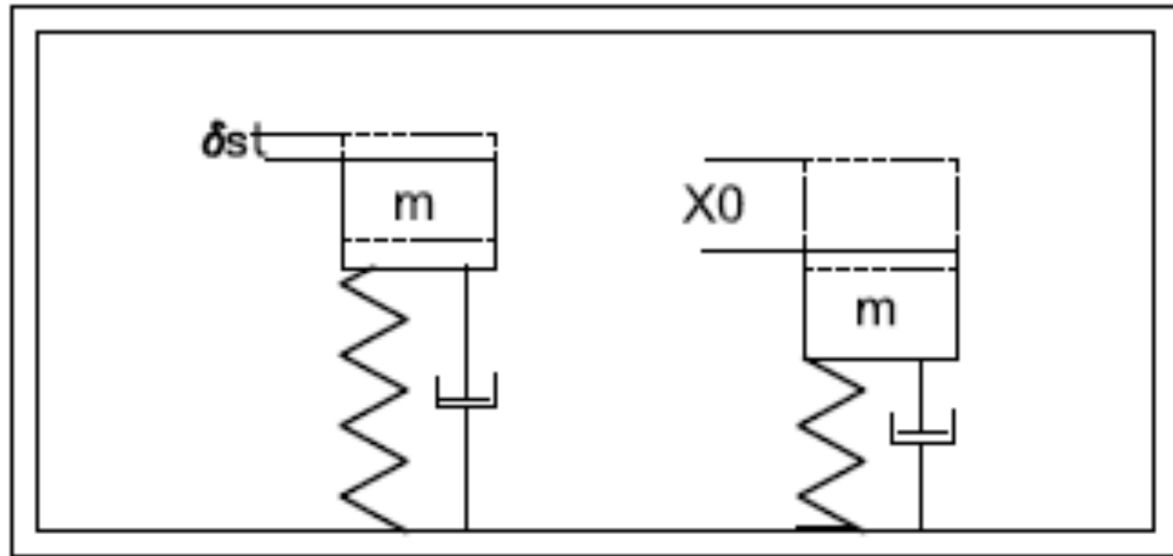
$$\frac{d^2 x}{dt^2} + K \frac{dx}{dt} + W_n^2 x = 0$$



$$\frac{A}{e^{t\left(\frac{K}{2} - \frac{\sqrt{K^2 - W_n^2}}{2}\right)}} + \frac{B}{e^{t\left(\frac{K}{2} + \frac{\sqrt{K^2 - W_n^2}}{2}\right)}} = x(t)$$

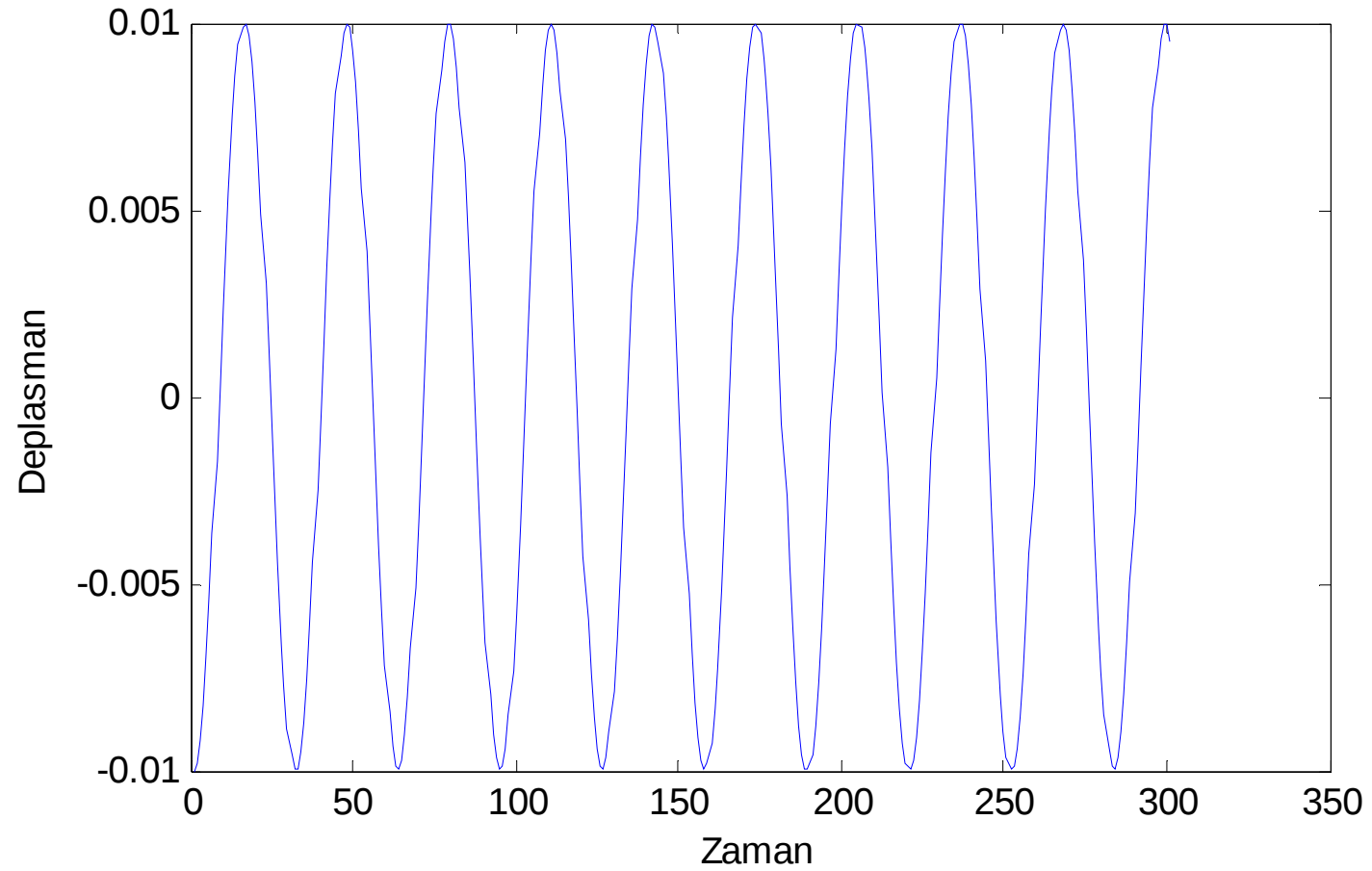


$$\frac{A}{e^{t\left(\frac{K}{2}-\frac{\sqrt{K^2-W_n^2}}{2}\right)}} + \frac{B}{e^{t\left(\frac{K}{2}+\frac{\sqrt{K^2-W_n^2}}{2}\right)}} = x(t)$$

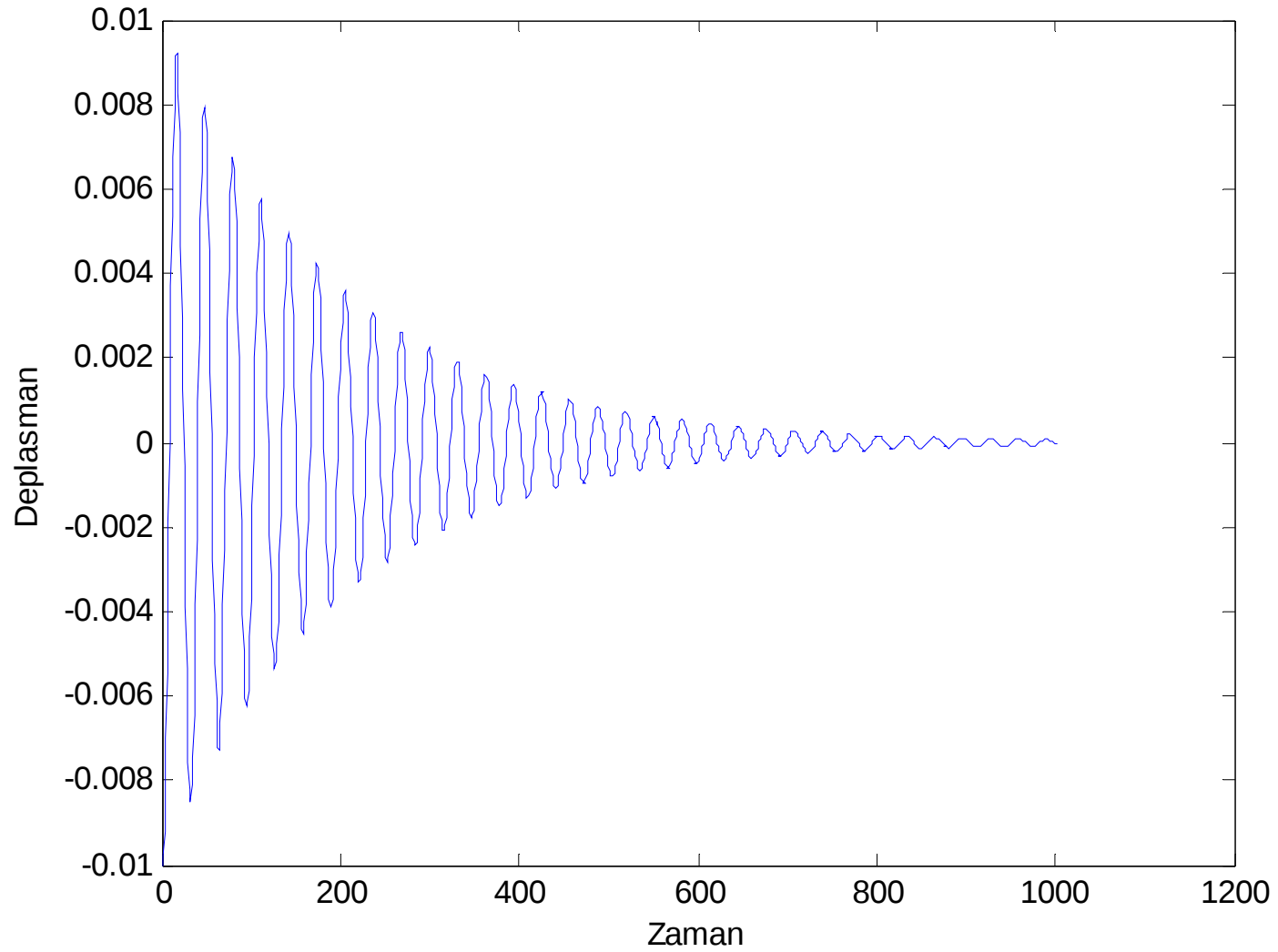


$$\frac{KX_0 + X_0\sqrt{K^2 - 4W_n^2}}{2e^{t\left(\frac{K}{2} - \frac{\sqrt{K^2 - 4W_n^2}}{2}\right)}\sqrt{K^2 - 4W_n^2}} - \frac{KX_0 - X_0\sqrt{K^2 - 4W_n^2}}{2e^{t\left(\frac{K}{2} + \frac{\sqrt{K^2 - 4W_n^2}}{2}\right)}\sqrt{K^2 - 4W_n^2}} = x(t)$$

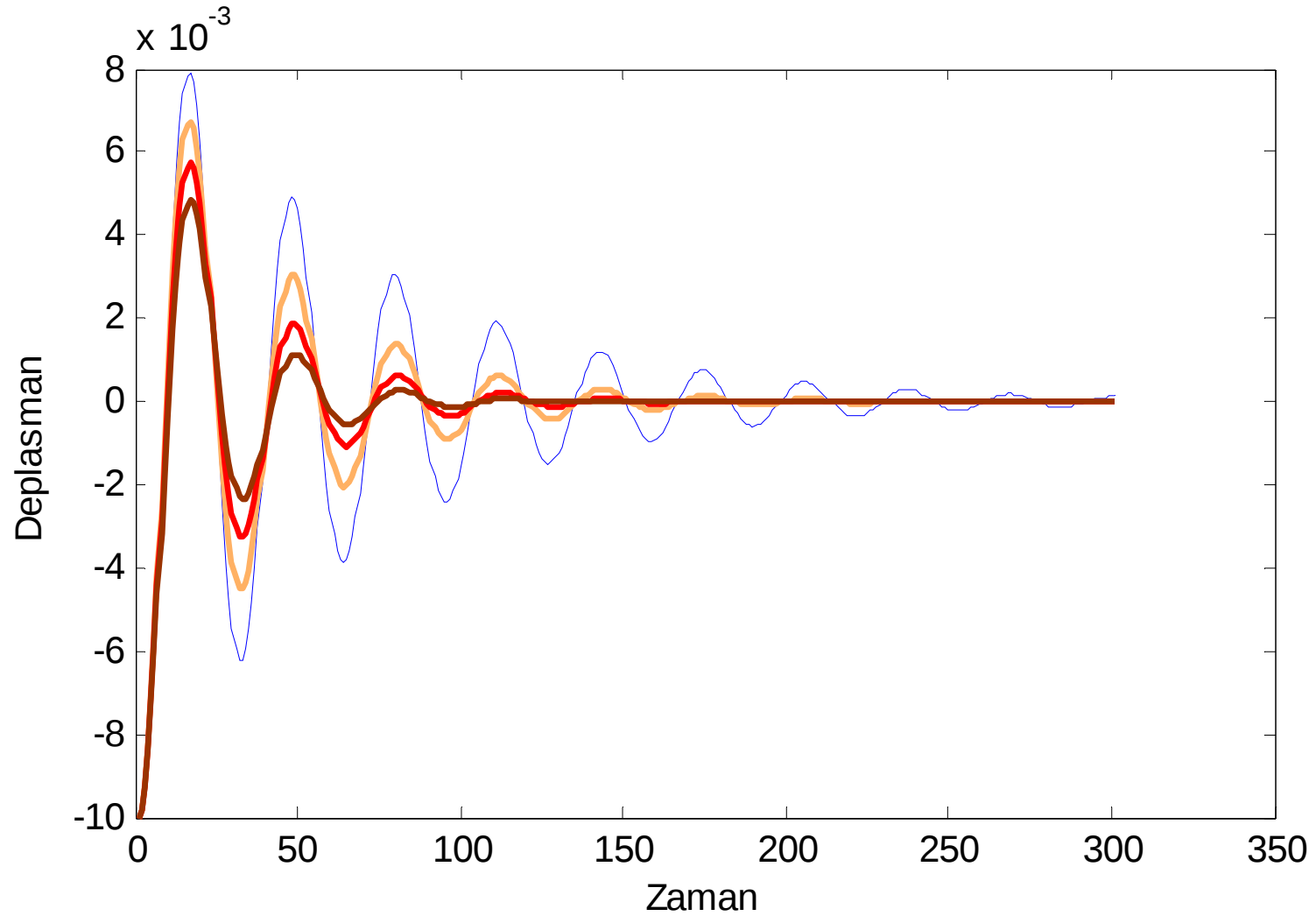
Sönümsüz titreşim



Sönümlü titreşim



Sönüm oranı değişimi kritik altı



Sönüm oranı değişimi kritik üstü

